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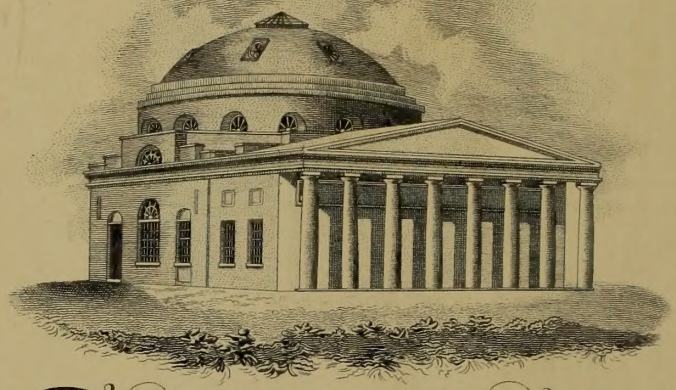

University of Maryland

University of Maryland Theses

Early Doctor of Medicine and Doctor of Physic Dissertations with Corrected Tables of Contents

These manuscripts described as either an Inaugural Dissertation or an Inaugural Essay were presented to the University of Maryland for the Degree of Doctor of Medicine and/or Doctor of Physic during the years 1813-1887. The individual dissertations were bound together during the 1940's. The original tables of contents for the bound volumes contained multiple errors in authors' names, titles, and/or years. To address these errors, an additional "Corrected Table of Contents" has been inserted at the beginning of each volume.

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UNIVERSITY OF MARYLAND

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UNIVERSITY OF MARYLAND

THESES

1869 (d)

Ranson, ~~B.~~ Briscoe B.	Physiology of the Brain	43p.
May, Frederick	Nutrition	26p.
Horn, ~~L.~~ Louis C.	Fever	22p.
Harper, ~~C.~~ Charles W.	Typhoid Fever	26p.
Bag~~by~~ley, Paul	Practical Physiology	44p.
Waring, ~~W.~~ William W.	Aetiology	60p.
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Harris, Joseph	The Appearances of the Tongue and Conditions of the Pulse in Different Diseases	22p.
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Dawson, ~~R.~~ Robert M.	Inflammation	24p.

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AN

Inaugural Dissertation

ON

Physiography of the Brain

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Brisco B. Ranson.

Of

Virginia.

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Session of 1868-9

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18958

The Nervous System is the

[illegible]

[illegible]

[illegible]

[illegible]

and as in its highest

[illegible] is more to the men

tal functions of the intellectual

and moral human & complex

[illegible] two apparently distinct

structures: 1st Nervous Centre —

viz Brain and Spinal marrow

and 2d Nerves which issue from the

Nervous centres and are [illegible]

over the whole Body.

The Brain properly that lies in the Upper Spinal axis which is contained within the cranial cavity, or Brain Box, it consists mostly of four parts, by the Ventricles and a part above called the Medulla, by which we are a quarter of spinal marrow called the Medulla Oblongata, and which by a neck the front and across upon that

[illegible] the [illegible]

[illegible] these together with

the [illegible] membranes &

the Brain constitute the

Encephalon (or xequey within

the head) [illegible] the

brain in adult males is on an

average about three pounds

[illegible] of the female only

five ounces less. The Brain

reaches its maximum weight about

the age of [illegible] years & is

[illegible] an age [illegible]

[illegible]

[illegible]

[illegible]

The Size of the Brain

seems to be a general rule in

the intellect. Hunter's

weighed a little over four lbs.,

that of Napoleon 48 oz., while

Webster's was about 4 lbs. On

the other hand the brain of an

idiot rarely exceeds 18 oz.

The brain consists of a white

& purplish colored [illegible]

[illegible] longitudinal
and transverse fibres of the
important nerve ganglia
which commence in the Me-
dulla Oblongata and
extend along base of the
Brain, nearly the entire
length, including all of
the Sensory ganglia for four
of the original nerves
in Spinal Nerve, while the
Sinus has same relation to
common Sensory track and

Lower part of the medulla oblongata, these parts, taken together are known as the pyramidal, decussating tracts. Behind towards we find the small pair of ganglia situated in medulla oblongata. The medullary striae of the 5th in tubercula cuneiform of the ganglia, 4th ventricle as the lower commissure, the olivary pyramid & corpora striata and are connected the same.

[illegible]

Cerebellum or 5th lobe, the small

ganglia situated on inferior surf.

Face of Anterior lobe of Cerebrum and

are ganglia of Rolando of small

size, nothing to do with com-

mon sensation or volition.

These ganglia are joined into a

kind nervous apparatus by

means of commissures. The two

principal are Optic Thalami with

Corpora Striata and connected

with the gray substance of the

peripheral & cerebral hemispheres
by radiating fibres.

The Thalami Optici have
not for their office, as you would
infer from the name, of providing for
the sense of vision but acquired
the name Optic from the fact that
they gave origin to one of the roots
of the optic nerve. Their real
function is to balance the muscles.
If the optic Thalamus on one side
be destroyed the unfortunate an
imal has no power to preserve its

equilibrium. The function of the
Corpora Striata is not definitely
known. They have probably some
connection with sensation & volition
The Tubercula Quadrigemina provide
as ganglia over the sense of sight,
hence if this is lost of vision will
ensue upon their removal or de-
struction. The Pons Varolii is
immediately connected with
the function of sensation and
voluntary motion. It is the ganglion
of the impressions conveyed on

wards through the nerves are first converted into conscious sensations, and in the voluntary impulses originate the stimulate the muscles to contract,

We naturally deduce the inference when we consider the relations the these centres bear to the nerves of sense that they are concerned in the manifestations of sensibility. We are aware that for sensation there must be an

impression upon the periphery of the organ of sense wh. must be conveyed to the brain in wh. an organic change takes place as the immediate antecedent of consciousness, and we have reason to believe that this condition of sensational consciousness is accomplished in three ganglia, each being related to that kind of sensibility wh. is peculiar to the nerve which

is peculiar to the nerve
wh. originates from it; if
the Olfactory ganglia be re-
moved there will be loss of
the power of smell. Ample
proof of this doctrine that
these ganglia are centres
of sensational consciou-
ness is afforded by the
experiments of Haller,
Cuvier and others upon
inferior animals. They re-
moved the Cerebral hemis-

spheres from pigeons,
leaving the sensory ganglia
undisturbed and they
retained consciousness
& external impressions,
but lost their intellect-
ual faculties. In one
of Fouget's experiments
he removed the Cerebrum
from a pigeon, and
then exposed the eye
suddenly to a strong
light, when the pupil

contracted, which is our
sixth conclusive
evidence that these
ganglia constitute a
centre, whose action
is the necessary condi-
tion of the consciousness
of other mental states;
viz, that they generate
motor influence. He
also cited a third, near
the stuffed bird and
it started suddenly and

jumped several times
but soon relapsed into
a state of lethargy
again. These are im-
perfectly involuntary
movements.

The action of
the sensory ganglia
is essential to the ex-
ecution of voluntary
motions, as there is no
anatomical connection
between the Cerebral
hemispheres and the

motorial tracts, except
through the sensory
ganglia, & we assume
that the will is mani-
fested through the
cerebrum, it is evident
that action of the
sensory ganglia must
occur before its man-
dates can reach the
cord. There is a relation be-
tween the sensorial office of these
ganglia and their motorial

which we can illustrate
this — in case of anaesthesia
of the arms with retention
of muscular power, the
patient is as unable to
sustain a weight as if the
motor nerves were paralyzed
unless he compensates for
the deficient sensorial
guidance by some other
sensual, so long as
he keeps his eyes fixed
upon his arms he can

sustain the weight,
but no longer. which
shows the necessity
for guiding sensation
in the performance of vol-
untary movements.

Wundt further con-
siders the sensory ganglia
as a sensorium commune
through which the mind
is made cognizant not only
of sensations but of all
its states, in its thinking

That for the consciousness &
or their mental states, it is
necessary that there should
be first an impression on
the cerebral substance at
Finsbury & Hampstead, 2d
its transmission to the sensor-
ium, and 3d a change in
latter just prior to consciou-
ness, in other words the cere-
bral matter which is at Sur-
rey & Hampstead and, & let
us call it Ibel, bears same

relation to sensory ganglia as the Retina does to tubercula quadrigemina. To take a resume of the functions of these ganglia they are 1st seats of sensational consciousness, 2d seats of consciousness of all our mental states, 3d centres of sensori-motor reflexes & 4th physician which the moment the cause voluntary motions.

The Cerebral Hemispheres show the highest of the mammalia

ganglia constitute about nine tenths
of the Brain; they as well as
the Lamina of the cerebellum are
invariable contact in entirely
devoid of sensibility & irritability.
Walton mentions a striking il-
lustration of this fact. The case
of a man who had an iron rod up-
wards of three feet long, and an
inch & a quarter in diameter driven
through his head by the blasting
of a rock. The rod lapsed in the
left side of his head inside the

frontal sutures and uniting
from a point near union of coro-
nal & sagittal sutures. The pa-
tient was able to walk about in
two months and in sixteen months
was restored to perfect health.
They are not the seat of sensa-
tion & volition, nor is death a ne-
cessary consequence of their re-
moval. The effect of this experi-
ment in birds was as we expect
it would be. Throw them into a stupor,
but they were still susceptible

to external influences. The cir-
cuitous matter of the hemisphere
is located at the distant ends
of a mass of nerve fibres which
connect it with the sensory
ganglia. If we regard the hem-
isphere of the Cerebrum & Cere-
bellum as nerve centres a natu-
ral inquiry arises as to the cause
of the deposition of gray sub-
stance upon their surface?
One advantage wh. accrues from
this arrangement is that it is

in close proximity to the blood vessels from which its capillaries are derived. It is essential for the action of the lungs that there should be an energetic circulation of arterial blood through them. Hence four large arteries are brought into requisition; viz the Int. Carotids & the Vertebrals after these enter the Brain box they communicate with each other so that if any

& these be protected the remaining parts are supplied a sufficient amount of the vital fluid to keep the machine in operation. But the two principal reasons for its disposition of on the surface has reference to two characters of the hemisphere as a peripheral expansion like the retina.

The Cerebral Hemispheres as the organ of intel-

ideal & moral powers of the mind may act without our knowledge in unconscious cerebration; e.g. a mathematician being unable to solve a problem, may leave it for a time and occupy his mind with something else, and then return to his problem, and find that he is further advanced in the solution of it than when he left it. This

can only be explained by assuming that the mind has been unconsciously acting upon the cerebral hemispheres, without waking the attention of the sensorium, because that centre was engrossed with the problem.

Hearing from that the sensory ganglia have power to act independently of the hemispheres, of course

the latter must have some special function, and we may inferably attribute to them those faculties which we know do not belong to ordinary ganglia, viz the Intellectual & moral faculties. The office of the Cerebral Hemispheres then is that of an agent of the Intellectual & moral powers, but the character of their office

Embodies instrumental
the immaterial spirit
acting through them just
as light acts upon the Tu-
bercula Quadrigemina, through
the medium of the Retina,
Comparative anatomy goes
to verify this, for development
of the Cerebral Hemis-
phere is proportional to the
intelligence, when these
faculties are removed in
lower animals the intellectual

faculties are the only one lost, and injury to them in the human subject is followed by a corresponding impairment of the same faculties, and in examination of brains of lunatics subsequent to death there is always found disease of the gray element on surface of hemispheres.

How can we reconcile the duality of the Brain with

unity of consciousness. The most natural way is to consider our hemisphere as intended to compensate for the deficiency of the other, and when a healthy hemisphere is unable to overcome a diseased one Insanity ensues. this accounts for the two distinct trains of thought at same time or in quick succession. hence we should endeavour to

occupy the mind of a de-
ranged person with one sub-
ject.

The Brain rests upon a sac
of fluid as upon a water bed,
and the office of this Sub-
arachnoid fluid is to regulate
the pressure upon the brain, so
as to keep it in a state fit-
able to perform its function;
for its healthy action it is
necessary that this pressure
should be uniform, and

as there is a determination of blood to the heart, fr. the Brain at every inspiration and recurrence. If it were not for this fluid wh. accumulates in or is displaced from the arachnoid space according as the rush of blood is to or from the heart (there would be irregular pressure exerted upon brain) if the latter a considerable amount of the Subarachnoid fluid

passes down into the spinal canal, and in the supply of blood to the Brain be deficient pressure in the canal causes the fluid to ascend to the Brain.

The two principal commissures of the Brain are the Corpus Callosum wh. is the great intercerebral commissure and the Pons Varolii wh. passes between the two hemispheres of Cerebellum. The Brain

has also several longitudinal commissures of Fornix, Semicircularis, Olfactory Tracts, Optic and Processus e Cerebello ad Pontis. It is thought that well developed commissures are indication of a high degree of intellectual development, because they increase in number and complexity with advancing development of hemispheres. The doctrine now generally

accepted with regard to the office of the Cerebellum is that advocated by Flourens who attributed to it the power of coordinating the different voluntary movements of the body. He based his opinion upon facts obtained from experiments. He removed a portion of the Cerebellum from an inferior animal and found that the power acco-

ciating the different vol-
untary motions was destroy-
ed, whilst the other faculties
remained unimpaired.

If the Cerebellum
be injured in a pigeon he
is unable to stand or walk,
although his muscular
strength remains in statu
quo, because he no longer
has the power of harmoniz-
ing the action of muscles of
his pedal extremities.

The opinion entertained by Phrenologists was that the sexual instinct resided in this organ, but that erroneous idea has been abandoned as well as whole system of Phrenology. If a young animal be castrated the Cerebellum instead of being destroyed increases in size as the animal attains his growth, and instances are recorded of total absence of

this organ without obstruction

& the sexual impulses, wh.

facts show conclusively that

the Phrenologists assigned

the wrong functions to the Cere-

bellum,

The Medulla Oblongata

is especially important be-

cause it has imbedded in

it a ganglion which presides

over the function of Respiration;

viz the Pneumogastric ganglion

which is situated in the Restiform

body, and is the centre to which stimulus that produces respiration is carried. This is a reflex action occasioned by an accumulation of CO^2 in the lungs, and may be voluntary or not;

The Corpora Pyramidalia are upward extension of anterior columns of Spinal Cord, and their office is to connect the right side of Brain with left side of cord and left side of Brain with right side

& the cord, an arrangement which fully explains the frequent occurrence of paralytic affections on the opposite side from that affected in the Brain. they connect motor fibres of cerebral hemispheres with anterior lateral columns of the spinal cord. they also send fibres into Cerebellum.

The Post. Pyramids which are continuous with posterior columns of the cord, connect

different segments of the cord together. They are in contact at first, but diverge as they ascend, and are finally lost in the Restiform bodies which connect the Cerebellum with the posterior column of spinal cord. Between the Corpora Pyramidalia and Corpora Olivaria the Hypoglossal nerve emerges. The Olivary bodies being origin of Glossopharyngeal

nerve is the ganglion of deglutition.

The Glosso Pharyngeal and Pneumogastric nerves have their apparent origin between Olivary & Restiform bodies.

The gray nuclei situated immediately beneath the fourth ventricle are regarded as the ganglion of the nerve of hearing hence give origin to auditory nerve.

The Medulla Oblongata therefore is to be regarded in a twofold: first as a medium of communication between the higher parts of Encephalon and spinal cord; and second as an independent nervous centre for the reflex movements that execute it: more especially those of deglutition and respiration.

Yours truly

B. W. Richardson.

1869

AN

Inaugural Dissertation

ON

Nutrition

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Frederick May

Of

Baltimore Md

Session of 18

Life has been defined, as the organism in a state of motion. Motion of necessity implies waste, but to check this loss or to replace it, we have the process known as Nutrition. From the moment of our conception, to that of death, is this process of waste and repair, going on. All our organs, and tissues, present numerous variations in their consistency and composition.

The friction of the numerous
pe acts upon one an other
would of itself be suf-
ficient to destroy us in
a very short time.
But how throughly is
this prevented by the
watchful eye of Nature
who is ready at all times
to make known to us our
wants that they may
be supplied.
It is indeed a beautiful
study, to observe the man-
ner in which the various

functions are performed in accordance with each other, no one being taxed to do more duty than an other.

If the circulation be studied though it might at first seem as being by far the most important, as it is by this means that nourishment is conveyed to the various parts of the body.

Yet it will be found to be entitled to a no more

conspicuous place than that of Respiration or indeed than any of the various agents that contribute to our existence I shall endeavor to give a general idea, not in detail for it would then be a subject which would require more time and talent than I have to bestow I shall therefore notice the various means by which life is maintained, as briefly as possible

communicating with the Circulation

The source of all growth and nutrition is the Blood from which materials are separated to be employed in the renovation and repairation of the tissues

It is obvious that this can only be accomplished by the parenchyma selecting from the capillaries and vessels those ingredients that can become incorporate to this process.

The various structures that compose the body, seem to possess a peculiar affinity for certain constituents contained in the blood for example. The constant introduction of Lead into the circulation modifies or destroys the nutrition of the Extensor muscles of the fore arm I think this phenomenon can only be explained by what is known as elective affinity

Blood is a homogenous red fluid. Consisting of a liquid and semisolid portion. The Liquor sanguinis and red and white corpuscles. These corpuscles do not exist in the same proportion. The red being the most numerous. I mention the proportion of these globules for the reason that the red globules are the means by which oxygen is conveyed to the tissues and

if they do not exist in a proper quantity nutrition cannot go on. This fluid is contained in and conveyed by numerous tubes running throughout the body These are the arteries, and they are composed of three coats. An internal homogenous tunic continuous with the endocardium A second or middle of yellow elastic and muscular fibres. And an

external vascular coat of
condensed areola tissue
I speak of the arterial
coats from the important
bearing they have.
The middle one particular
ly in regulating the
constant supply of blood
to the numerous parts.
For if the blood was
driven forward only by
the heart through
inelastic tubes, the ef-
fect would be, that
instead of a constant

current we would have an intermittent stream which would supply nourishment in a very deficient manner.

The Heart is an organ whose duty it is to receive blood, to force it into the lungs, where it undergoes so important a change, that of giving off Carbonic acid and obtaining oxygen; it is then returned to the heart and forced on its

way throughout the
the system. The blood is
there returned to the
heart by the veins, and
as it returns it collects
all effete substances and
is loaded with carbonic
acid. I think I may
return to the lungs for
a few moments again
to give an idea of the
change which takes place
there ~~in the lungs~~
This change is all impor-
tant to the proper conduct

tion of nutrition.
It is here the blood is brought into contact with the oxygen which finds its way to the lungs during inspiration. and that change caused by the diffusibility of gases takes place.
I think it unnessary for me to state the various quantities of air that are inhaled and exhaled but simply how much is necessary to obtain

a sufficient amount of Oxygen necessary for due aeration of the blood. According to the researches of various and eminent Physiologists, the air looses during respiration, an average of five per cent of its volume of Oxygen at each inspiration. Therefore about one cubic inch of Oxygen is removed from the air and absorbed by the blood. And as it requires three

hundred and fifty cubic feet of air in twenty four hours necessary for Respiration to be properly carried on, it cannot be too forcibly impressed on the minds of all persons the necessity for proper ventilation. And indeed there is scarcely a subject on which so much has been said and written, and to which so little attention has been paid

But there are other modes by which food is supplied, as well as its being obtained from the air. But yet I consider air as much an article of food and as necessary for our existence as animal or vegetable matter, and even more so, for we can exist for a short time, at least without solid or liquid matter being consumed, but not without air

Still though is it necessary that food should be taken into our stomachs digested and absorbed or we will be unable to live.
And for this purpose has a nature provided for us a peculiar whose duty it is, to watch and make known our wants. This is the sensation of Hunger.
Hunger though refused to the stomach

is governed by the condition of the system at large, being increased when the demand for nutrition is greater than that which the blood can supply, and being diminished when such an addition is made to the nutritive ingredients contained in the latter, as renders it adequate for this purpose.

There is yet an other

sensation peculiar to all living animals, and vegetables,- for they require that water shall be supplied to them as well as to animals-
This is the sensation of thirst- And this feeling can be described only by those who have experienced it, words are inadequate to the task. While reading the accounts of persons cast away at sea- It will be invariably

seem, that they forget the pangs of hunger, for the want of a little water to relieve their thirst. This to persons unacquainted with the formation of the organism, might cause surprise;
But to those who have made it their study it is very clearly understood. By experiments it has been demonstrated that about two thirds of our entire weight is

composed of water.
All this water is obtained from without, and has to be taken in with the various kinds of food and drink. An other important fact showing the necessity for water is the amount consumed each day. It is scarcely possible to give the exact quantity which is taken in daily, but some approximation has been arrived at, by mea-

suming the quantity taken in, in liquid form, and calculating the amount contained in the solid food, it has been ascertained that about four pounds and a half are necessary in a state of health. I do not intend as I have previously stated to go into minute details, and shall therefore now mention other ingredients which are necessary for nutrition, Oxygen and

Thirst suggest to me, the propriety of now speaking of food. That is I mean vegetable and Animal.
For the proper definition of the word is. Any substance which will supply material necessary to replace the effete matter which is constantly being given off.
The various kinds of food have been classified into three. Inorganic. Organic Nitrogenized and Organic

hon hitrogenized. Which constitute the Proximate Principles-
Although these principles do not exist in the same proportion in the body and are therefore not required in the same quantity. Yet I regard one as important as another.
After the food is obtained it requires to be digested. This process is performed by the juices secreted from various parts of the Alimen

tary canal. Each secretion having the power to digest certain substances but it is absorbed, and passes into the blood.
Now after this process is accomplished, and indeed during it disintergration is constantly going on and effete matters are carried off. This process is performed by the Urine Perspiration and Respiration.
To conclude, I have only

to say. That as the wants of the body for nourishment are so clearly understood in a state of health. How singular it is, that Physicians, and happily they are now very few will not take into consideration the importance of nourishment in disease For if the want of Water and Food in a healthy condition is so great, How much more must it be when a patient is burning

up with fever. and yet these men continue to stave and deplete, as if they thought to remove disease, by taking from the body its life.

Hoping this will meet with the approbation of the Faculty.

I remain respectfully
Frederick May.

AN

Inaugural Dissertation

ON

Fever

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Louis C. Horn

Of

Maryland

Session of 1860.

Fever.

The subject of this essay having occupied the consideration of medical men since the very infancy of the art. It is not likely that a tyro can throw any new light upon it, but its importance justifies its selection for consideration at the hands of any one; the more so as it comes forward daily to every practitioner to be dealt with, and under circumstances that require both prompt and intelligent action. It presents in the very outset a difficulty

namely: that of determining what it is, or what is to be considered as Fever. If therefore only that is fairly settled, much will have been accomplished, but this is of itself no trifling task. In the condition considered there are but two constant symptoms Increased temperature and an increased number of pulsations, but even these require to come together before it would be justifiable to apply so formidable a name; as the normal pulsations may be increased by exercise

or even mental emotions,
and the temperature may be
raised by similar causes
and also by other means and
yet nothing may be wrong
in the economy. We can
therefore scarcely trust
ourselves alone to that
definition of Fever which
describes it as "Increased heat
and increased rapidity of
pulsation, and must therefore
look farther to understand
its nature and give it a
more accurate definition,
and one less liable to objection.
Fever is a common

accompaniment of any disturbance of the even balance of the economy, whether grave or trivial. An infant has a tooth breaking through the gum, and with it "Fever" or perhaps it may have partaken a little too freely of its mother's milk, and indigestion follows, and in its train comes "Fever" with a host of other ills. The mother herself, shortly after the birth of her child begins the physiological process of lactation, and that too is ushered in with a "Fever" A leg is amputated or

broken, or a joint dislocated or may be only sprained, and among the other troubles the Patient has a "Fever"; in fact this constantly recurring evidence of a disturbance of the physiological condition is so common that a large number of the diseases in our nosology have the word permanently tacked on to them as a title, while many conditions exist that are considered as sufficiently explained by the word "Fever" alone while at other times some other vague term such as "Congestive" "Irritative" &c

is added, with a confidence on the one hand, and an admiring, wondering satisfaction on the other that the most elaborate explanation of "Anatomical, physiological, or pathological conditions or principles would fail to elicit. The word is in short, a very convenient one, as affording a satisfactory explanation of almost everything, and has the respectability of both age and "Scriptures" on its side for nearly 1900 years ago we learn in "Holy Writ" that "Simon Peters" wife lay ill

of a "Fever" and at the present day, when some urchin is tossing about at night, paying the penalty of overloading his ~~xx~~ stomach with his favorite dainties during the day, his grandam will anxiously examine him and pronounce the sentence that summons the "Doctor" from his bed to measure out the "Ipecac". This child has got a "Fever". It would seem seasonable, therefore, to add to our definition of "Fever" this disturbance of function, or want of.

equilibrium which seems
so constantly to attach to it
as a condition of its
existence. The dryness
of the skin which accompanies
"fever" (and which is sufficient
to account for the increased
heat by the lack of evaporation)
is an evidence at once that
the functions of the skin
are greatly interfered with,
and when the importance
of those functions, and
their extent are considered,
there is at once sufficient
explanation of many of the
evils that come in its train.

Let us take a case and consider, at least theoretically, how the skin may be implicated, and for this purpose our previously mentioned case of overloaded Stomach will do as well as any.

The mass of food may be otherwise sufficently digestible, but is so large the Stomach cannot by ordinary efforts dispose of it. Extraordinary ones are then made, and these too failing, the Stomach, exhausted, calls as it were upon the whole organism for assistance, and meets

with a prompt response
all, including the Skin,
dropping their own legitimate
duties to contribute blood
and nerve force to their
fellow laborer's aid, and
until these are restored,
the Skin must forego its
accustomed Secretion and
remain hot and dry, while a
vitated blood is in consequence
of its inaction, carried to
all parts of the body, including
the brain, which throbs out
its wail of Suffering at the
unnatural condition of affairs,
until the overburdened Stomach

[illegible]

[illegible] respected [illegible]

[illegible] of doing [illegible]

[illegible] manifestations [illegible]

There then seems to be

no foundation [illegible]

[illegible]

itself externally by an

unexpected [illegible] and

unnatural rapidity of

[illegible]

A great number of [illegible]

and [illegible] by [illegible]

[illegible] which, having

[illegible] [illegible]

[illegible] death [illegible]

[illegible] either overmastered

through fear,
the selection of which
marks the [illegible], and
[illegible] reason.
These are called Idiopathic
[illegible]
unusual movement.

Physician has to [illegible]
[illegible] education.

[illegible] of some
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AN

Inaugural Dissertation

ON

Typhoid fever

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Charles H. Hague

Of

Washington County, Md.

Session of 18[illegible]

To Richard McSherry, M.D.
Prof. Practice of Medicine in the
University of Maryland.

Dear Dr.,

In dedicating this thesis to you I have no choice of words. The memories of your many acts of kindness crowd too closely on my heart for that. From the day when I was first received a student, I have only a remembrance of your more than fatherly kindness and affection. May you long live, to ornament the honored position you now hold, is the sincere wish of your friend.

Charles W. Harper.

Typhoid Fever.

Typhoid fever, or as it is sometimes called "Enteric fever" is a disease the name of which every person is familiar with, as well as the terror, which it inspires in every household. The name "Typhoid" is open to objection; so says the learned professor Austin Flint. And am not well enough versed in the nomenclature, to offer a better one, I will content myself with the name "Typhoid" and proceed to briefly note its Anatomical characters, Clinical history, Causation,

Diagnosis, Prognosis, and Treatment.

Anatomical Characters. There are very few organs in the body which are not found more, or less affected after death, resulting from Typhoid fever. The most special lesion found after death is sloughing, and ulceration, of the glands of Peyer, and the Solitary glands. Indeed this lesion has become quite as characteristic of this disease, as the peculiar pustular eruption has of Small-pox. The first changes occuring in the patches of Peyer, and Solitary Glands,

an enlargement, from the presence of the supposed Typhoid material, then their surfaces are observed to be elevated from one, to two lines above the mucous membrane. The mucous membrane over the affected patches is of a pinkish, or a purplish hue, and corresponding portions of peritoneum much injected. The patches are generally from one, to three inches in length, and from one half, to an inch in breadth. the long diameter being in the direction of the intestine. Some are smaller

and more circular, with edges clearly defined, smooth, and regular, but in others irregular, and ragged. The above condition was observed in a specimen, shown to the class, by the distinguished professor of Practice of Medicine. There are two varieties of them distinguished by Fonis, who was the first to point them out, the hard, and the soft. The former are hard to the touch and when dissected are found to contain beneath the mucous membrane a layer of white, or yellowish, firm

brittle matter, the cut surface smooth and shineing. The latter are softer, less elevated, and destitute of the whitish layer. The hard patches may undergo resolution, or ulceration; the soft always ulcerate. The Spleen is found more, or less enlarged, and softened, in the majority of cases. Minute ulcerations in the Pharynx, and Oesophagus has been observed in a small proportion of cases. The Liver is also frequently softened, though in a less degree, and is frequently otherwise altered but without

I believe any constant characteristic lesion. The kidneys are in some cases notably congested, and in others unusually pale. They are frequently found enlarged, and the uriniferous tubes filled with exfoliated epithelium. Pneumonitis is a not infrequent occurrence; when it is a complication the bronchial glands are apt to become enlarged. I believe there is no ground for attributing the enlargement of these glands, to the presence of the typhoid material. So says Professor Flint. The brain

exhibits fewer evidences of disease than would be supposed from the symptoms. Sometimes the membrane presents an inflamed, or congested appearance, and effusion has been observed. The substance of the brain presents when cut, red points. On the whole, the evidences exhibited by the brain are very few. I now come in my opinion, to describe a very important lesion in this disease, and one that but comparatively little notice has been taken of by the profession. The author of this treatise had the misfortune to suffer during the winter of eighteen hundred

and sixty two, with Typhoid fever.
After the abatement of the more violent symptoms of the disease, and when convalescence began, I was taken with a pain in the course of the Sartorius muscle, sometimes so painful, and alarming in character, that during the attack, (which usually lasted from fifteen, to twenty minutes) life was despaired of. These attacks came on regular, once in every twenty four hours, and continued the time named. After all the symptoms of the disease had

abated, and when convalescence was fully established, I could not walk without assistance for several months. In fact I have not yet fully recovered the use of my legs, and cannot without the greatest difficulty cross one leg over the other. Now in my opinion, there is a lesion of this disease situated in the muscles of the legs, and one which if carefully analysed by the profession, might throw great light on the Growth of the disease. Clinical History.

Typhoid fever as a general rule is slow

in its development. The time occupied is by some considered the precursory period, and by others the stage of the disease. It sometimes begins abruptly with a chill, followed by some fever, But as it occurs in this country it more frequently comes on insidiously, and increases gradually, which renders it difficult to fix the precise point of commencement. The patient feels uncomfortable, complains of weakness, general uneasiness, soreness of the limbs, and frequently headache. The skin is somewhat heated, face

flushed, and the pulse accelerated. If the tongue be examined it will be found to be slightly coated with a whitish fur. The appetite is impaired, though not extinguished. These symptoms continue with a slowly increasing intensity, with a tendency to daily remissions for several days before the patient takes to bed. Occasionally during this period slight chilliness is felt, alternating with febrile sensations though the patient sometimes complains of no chilliness whatever, and the feeling is not experienced. When the

disease is completely formed, the chill-
ness disappears, and does not return
unless at the commencement of some
incidental inflammation. During
this stage there is generally some loose-
ness of the bowels, sometimes amount-
ing to diarrhea, when this is not the
case there is great susceptibility to the
action of cathartic medicines, which
operate with more than usual effect,
though given in small doses. The
disease now being fairly under way,
presents the ordinary phenomena of

fever; frequency of pulse, increased breathing, heat and dryness of skin, flushed face, pain in head, loss of appetite, thirst, weakness &c. The pulse is sometimes but moderately increased, not exceeding ninety, or one hundred per minute, in other instances very frequently small, and compressible, often amounting to one hundred and twenty, or forty. The flush of face is of a more purple tint, than in most fevers; and when it is absent there is not unfrequently a dusky hue, of the complexion, with a dullness

or heaviness, of countenance. Headache is very seldom absent; and is the chief subject of complaint. Epistaxis is a frequent occurrence. Other symptoms now manifest themselves, the tongue previously moist, or clammy, becomes dry and assumes a brownish colour. Deglutition is painful, or difficult. The abdomen is distended, and upon percussion sounds hollow or tympanitic. If the surface be examined the rose colored spots will be found, appearing first on the abdomen; and frequently extending to the chest,

and lies. Delirium, or stupor, takes the place of the headache, Ringing in the ears, or buzzing, is followed by hardness of hearing. The tongue is protruded with difficulty and frequently trembles in the effort. If the disease continues, a completely typhous condition is developed. The tongue is dry, often gashed, and sore, or incrusted with a brown, or black coating, while dark sordes collect upon the teeth, gums, and lips. The pulse becomes frequent and feeble.

and a peculiar unpleasant odour often exhales from the body. The patient is very feeble, lying on his back, and frequently slipping down in the bed. He picks at the bed clothes, mutters half formed sentences, and frequently raises from the bed. If the disease is to end unfavorably, the pulse gives way and becomes either exceedingly ~~v~~ frequent, or slow, and scarcely perceptible. The extremities become cool and clammy, and the whole surface

bathed in a clammy sweat, the abdomen is distended, hiccough occurs, and life is almost insensibly extinguished. When the disease is to end favorable, the tongue becomes moist, and begins gradually to clean itself at the tip, and edges, the pulse lessens in frequency, the skin becomes cooler, and the dry, and an inclination for food returns, convalescence, under these circumstances speedily takes place. There is a

fatal termination of this disease, frequently following certain symptoms, during the cleaning of the tongue. Instead of cleaning gradually from the edges, the fur is thrown off in flakes, generally at first from the centre, or toward the base, leaving the surface smooth, red, and shining. Closely following this the patient is suddenly seized, (without any premonition) with a violent pain in the abdomen, the knees are drawn up, the face assumes a ghastly, and anxious

appearance, rigors, an exceedingly frequent pulse, obstinate constipation, and vomiting, are also frequent occurrences. Death generally following in the course of one, or two days, from perforation of the intestines, and the escape of its liquid contents into the peritoneum, causing peritonitis, which in the majority of cases proves fatal. The duration of the disease is uncertain, but usually protracted. Death may occur on the sixth or seventh day, but so early a termination is rare. It generally occurs in the course

of the second or third week. The period of convalescence is variable. It may occur on the ninth or tenth day, but may begin the second or third week. Etiologia As to the cause of typhoid fever, nothing definite is known. It seems to be endemic in its nature, being most frequently generated in places where people are crowded together with insufficient food, and a vitiated atmosphere. Diagnosis. The most prominent symptoms of this disease are the frequently slow and insidious mode of attack, by the diarrhea at the beginning

of the attack, or directly after the administration of any purgative medicine. The dull heavy expression of countenance, the dusky hue of face, the rose colour ed spots, are all prominent indications of the disease. It is to be distinguished from Typhus, and Remitting fevers. From the first it can be distinguished by the rose coloured spots, the length of forming stage is longer than in Typhus, the abdominal symptoms, the diarrhea, the tenderness, and purging.

From intermittent fever it is to be distinguished by the intermission of the fever, and by the above named symptoms which are characteristic of Typhoid fever. Prognosis. Typhoid fever though a serious disease, is not a very fatal disease. It assumes different degrees of violence, under different circumstances. No case should be looked upon as lost, let the symptoms be ever so desperate. Great prostration is evidence of great danger. Do cases of

pregnancy, abortion generally ensues and very often death. Certain epidemics of Typhoid fever are very mild, while others are very severe, and fatal. Dr Wood states the average amount of deaths in his experience was one, out of seventeen, his cases being of all grades of severity. Of those analyzed by Dr Flint eighteen were fatal in seventy three, or one in four. Treatment. The general rule in this disease is to sustain rather than lower the patient. The expectant

plan of treatment is mostly followed by Dr McSherry. It is by some insisted a zymotic disease, then the sulphites are said to be useful in arresting the fermentation. Evacuate the primæ viæ by an emetic & cathartic in the commencement of the disease. Nitrous powders, with Veratrum Viride may be given to allay the febrile symptoms. Diaphoretics, as Spts Mindereri, effervescing draughts, nitre water, and cold sponging. — Ice to the head when it shows

considerable heat. After the first onset, and as soon as the system shows failure of power, stimuli are resorted to. Milk punch, rum whey & whisky. Hewhams tinct of bark is a favorite remedy with Dr McHenry. In obstinate insomnia ¼ gr of opium, with ⅛ gr tartar emetic, every two or three hours or ¼ gr of opium, & gr camphor & ½ gr Ipecac. Superficie stupes to the abdomen. Suspension internally when the tongue cleans on sides & back & presents

a dry shining appearance. Dose 5 to 20 drops every hour or two. In 24 to 48 hours the tongue begins to moisten. Diarrhea must be held in check by chalk, Bismuth, acetate Lead &c. The acids are very useful. The urine must be attended to, and accumulation prevented, Diet. A nice balance must be observed, so as not to overload the stomach. Beef Tea, Milk punch, broths &c. Dr McSherry thinks our plan of treatment should partake of the Expectant Evacuant, Tonic &c accordingly as they are indicated.

AN

Inaugural Dissertation

ON

Practical Physiology

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

Paul Bagby

Of

Maryland

Also Missionary, & Atty. in Supreme Court U.S.

Session of 1868-9

Practical Physiology

Thesis by Paul Bagby

Of the University of Maryland

Gentlemen of the Faculty:

In laying before your learned body this thesis which is demanded by the laws of the University permit me to avail myself of this opportunity to give expression to a few practical thoughts which should be known not only as they are to medical men but to everybody

The people, sirs, are too often and too willingly ignorant of the vital laws of health

and of life.

Fair Physiology thy name we love
O teach us how to live thy laws to prove
Neglecting these we fall into decay
As houses do when tenants go away
Laws fixed of God are constant for our good
Our stepping these in air or drink or food
Soon Nature speaks and warns us of the cost
Of what we must expect when health is lost.

Impure water I have seen men
drinking the waters of the Shanghai
River in China and dying off by thou-
sands. The river is filled with

animal and vegetable matter and living in a warm climate and low flat region of country the mortality has been known to reach as high as a number equal to one third of the resident population of Shanghai in a summer season

The greatest mortality is among seamen and strangers who are apt to take the water without precaution, and thus multitudes in death testify to truths they neglected in life. The remedy adopted by the natives is to boil the water before using and thus destroy the living animalcules

Indeed this is the common custom of China and probably gave rise to the cultivation and use of the herb which we call tea. The same course is pursued by the foreign residents while the men-of-war steamers use condensed water to great advantage

In Calcutta large reservoirs are dug in the sandy soil of the city and the water collects in them by rains and from the soil and remains there beneath the burning sun giving out a green impure appearance and

so is used by the European merchants and others of this "city of palaces" doubtless to their destruction.

From what I have seen of water works in this country and Europe I have no doubt that vast improvement could be made at an additional taxation of less than it costs to bury the dead But individuals could at least boil water in cases of epidemics and set it aside during the night to obtain the proper gasses from the atmosphere and use with

ice. How much of mortality in this country is due to impure water, it is impossible to tell but from the fact that few persons are disposed to call in question the quality of water that everybody is using it becomes a matter of serious public concern

Water enters into the system without digestion and a very large proportion not only of the blood but also of the tissues and the bones is composed of it and its purity is essential to life

pure air — If men are disposed to disregard the laws of health in regard to water even more so are they in regard to air. When it is reflected that every drop of blood must pass through the lungs for its proper aeration in order to its due supply of oxygen what must be the inevitable result of inhaling a vitiated atmosphere that is incapable of supplying this demand? What but a poisoning of the blood and derangement of its functions and properties!

Yet such is the wholesale violation of this principle of health that men and communities think it can be violated with impunity. I saw in the "lodging houses" of London under the inspection of the legal authorities rooms containing from fifty to a hundred and fifty beds ranged along not more than three feet apart each man inhaling the carbon and effete matter thrown off from the lungs of his neighbor, not to

mention the worse inhalations from excrements exposed.

Worse even than this is the crowding together of hundreds of human beings in our factories and workshops often exposed to chemical influences which destroy the last vestige of color from the complexion of the artisans while they add to the fabric the highest colors of art.

Our school-rooms and colleges too, are too often (are too) deficient in ventilation and as a consequence

we have young men sent out upon society with unfitted frames and young women too often unable to bear their burdens through life.

Our American ladies are indeed very beautiful in all that is delicate and intellectual and refined but more air or oxygen would not detract from their brain while it would add to their bloom.

Improper food. The human frame requires a large amount of organic and inorganic matter which we

call food and whatever merits may be advanced upon the subject it does supply the power to the system that coal does to the steamer. Yet there are men that habitually deny to themselves and their families those things without which it is impossible for health to continue unimpaired.

There can be no excuse for the violation of this law because there can be no escape from its penalty. Surely there need

be no man in this country at least whose labor will not insure to him a sufficiency of food. But too many either labor not at all or labor for lucre. And it is to be feared that even in the higher circles of society — much more attention is paid to the ornaments of the parlor than the usefulness of the table. Good food and enough of it — no gluttony.

Insufficient exercise — That which motion is to machinery

exercise is to existence, with this in favor of our frames that they are self repairing, so that notwithstanding death to minute particles of matter occurs upon the motion of every muscle yet a new and living particle is supplied in its stead.

It follows therefore that he who neglects to take that exercise which nature needs is over running his machine with rusty gouty gear.

It is not sufficient that a young lady should take a drive to the park or an hours walk a time or two per week Nature never made her laws to be fulfilled by service such as this Exercise sufficient to bring the muscles into active play is absolutely necessary to ~~[illegible]~~ ~~[illegible]~~ and the bloom of beauty bounding to the cheek Dancing it may be proposed will answer every purpose of exercise It will <u>and</u> <u>more</u>. A shamer

steerage passenger was once asked what he thought of the fare. He replied "Oh the fare's all well enough but it's the surroundings"

Again some gentlemen once inquired of another if he thought there could be any evil in gambling provided the game was strictly fair. He replied "Gentlemen the

fact that you have washed your pig so clean before you brought him to me is evidence that you are as much disgusted with a common swine as I am" Dancing when disturbed of all inferior surroundings may be a healthful exercise but like the gambler's pig its tendency is ever to the mire

Only a few weeks ago our
distinguished fellow on the
Principles and Practice of Medicine
related the case of a young
lady who was taken suddenly
ill on her way home from
a dance and died upon
a door step from no
other immediate cause
than he could discover
than the transudation of

fluid into the pulmonary canal brought about by tight lacing and consequent in crowded rooms.

The father of a young lady, remarked to me last summer that she had never been well since taking a bronchial cold at a dance.

Whatever men may think on this subject it is evident that Physiology can supply other and better exercise to those who will take it.

Sleep Sound sleep and

(over)

[illegible] is as much [illegible]
by the laws of our nature as
wholesome food in sufficient quan
tity. As a people we are remark
Marvelous stories are told of
men reducing their time of
sleep to four or five hours
in the twenty four and Napoleon
is cited as an instance and
we are told that even upon the
battle field he could snatch
a moment to suffice for repose;
but if Nature overtook the world
conqueror upon his field of battle
and arrested from him her tribute
it should teach us not to resist
her process

The Chinese are said to excel in cruelty of torture; I have seen, after death, the mutilated remains of a human being hacked limb from limb and his heart torn living from his body in the City of Canton; but this can not compare with the torture that has been inflicted by a sentence of death carried out in upon the culprit one moments slip He would slip through spears and heated irons for a season made him wake; until one then could no longer arouse him and he slept in death.

Intemperance. The ways and means that men have devised in all ages and nations to make themselves drunk are limited only by the resources of the earth and the inventions of mind whether in savage or civilized society.

The Japanese revel over their saki prepared from rice - the Frenchmen take their wine - the Englishmen and women take their beer and ale while our own countrymen revel and rot in whiskey and gin. But each in his own way is drawing

upon the bank of his being till sooner or later his drafts are dishonored and he is cast into prison to pay the debt of his follies Some seem to escape to their threescore years and ten and to defy the laws of temperance with impunity — but all men marvel and bear witness that they are convicts escaped from the penitentiary of pollution bearing about them the brand of the institution to which they belong Alcohol prevents the waste of tissue so that a drunken man has little appetite for food and though he may

seem to accumulate fat it is rather the effete matter which should have been thrown off than healthy tissue formed and he is consequently a fit subject for disease which is much more likely to prove fatal

<u>Opium</u> is a species of debauch as common in China as drunkenness with us and much more destructive. The Governor of a prefecture once replied to me in regard to his opium "Oh I know it's killing me but I can't help it;

I wish I had some medicine to cure me" Japan has enacted severe penalties against the introduction of opium into her territory and it becomes a matter of very serious concern how far physicians are justified in prescribing a drug at once so insidious and so dangerous

Tobacco has a narcotic influence and in certain cases of nervous excitement may be beneficial, but such has become the abuse of its influence that as a people we are probably more addicted to tobacco than the Chinese to opium and though its effects are much milder yet it is doubtless a serious violation

of the laws of health because neither the nerve centres nor the lung tissue can be lightly trifled with

Coffee calls for caution

Nameless Crime From the days that Onan son of Judah "did evil in the sight of the Lord and the Lord slew him" until today, and throughout the nations of men, savage and civilized, this crime against nature has disgraced humanity "The children of Israel did secretly those things that were not right in the sight of the Lord wherefore the Lord gave them into the hand of the king of Babylon" Bible "It is a shame to speak of those things that are done of them in secret" Bible

"For even their women did change the natural use into that which is against nature; and likewise also the men leaving the natural use of the woman burned in their lust one toward another; men with men working that which is unseemly, and receiving in themselves that recompence of their error which was meet" – Bible

Blackstone records the most stringent laws against all such abominable and nameless crimes, blackening the books of the common law of England and in some cases calling for capital punishment. They are shockingly common in China and Japan.

In California I was told by the superin

of an insane asylum "If you ask me for the immediate and exciting causes ascribed for the insanity of these inmates you would find them as varied as the individuals themselves; but if you wish to know the real reason of their insanity it is self pollution"

"Parents should not hesitate to tell their children that their secret organs are the most sacred parts of their bodies and should never be trifled with; and if they do so they will go crazy"

Lecture Univ. of Md.

Abortion - The Chinese bring forth their children and not wishing to increase the population too fast sometimes destroy the females or leave them by the wayside

to their fall; and the world has re-
echoed with their cruelty and crime
But who can not see that their cruelty
is not to be compared to those who dis-
troy their "hidden untimely birth that
never saw the light" My father
told me of a woman who had one
child and made her boast that she
never intended to have another and she
never had but she consigned herself
to the grave. Had my mother listened
to such counsels, instead of bringing forth
her family of ten, I never should have been
born. A young woman of high standing
showed her lover a passage from a popular
author wherein it was stated "There are
too many children in the world anyhow;

no body ought to have more than two or than" and thought it a wise sentiment. Her lover thought her too wise to become his wife. A theological student once told the writer that he intended to marry but he never intended to have any children. Another thought it absurd that a woman after marriage should be expected to bear children if she did not want to do so. He was referred to Genesis 38:7-12 for the violation of this law of nature and its effects. The learned Prof. of Obstetrics notified the class recently that we would continually be approached by men inquiring what they must do to prevent their wives from bearing children too rapidly. Our mortality reports are filled with

"still born" births. The legislature of Maryland has recently instituted a strict inquiry into the character of medical practitioners and forbidden apothecaries to prescribe in order to prevent the prescription and sale of abortion drugs.

But, sirs, our physicians too often pander to the prevailing vice and our popular preachers will not read those scriptures that are written for our warning, much less shout to the people that He who said "Thou shalt not kill" as much meant the foetus in the womb as the ~~body~~ infant at the breast or the matured man. The tremendous train of uterine and other diseases that often follow a single abortion are sometimes suf-

ficient to deter persons from attempting its repetition; but Nature too often avenges herself upon her enemy by, ever afterwards refusing to the woman the fruit of the womb or consigning her to an early grave. Better, far better, that an unmarried woman should bring forth an illegitimate child than that she should destroy the life of her offspring and endanger her own

<u>Prostitution.</u> - The laws of health have probably violated more by this means than by any that have been or can be named. Promiscuous intercourse of the sexes has ever been condemned in the most marked manner by the author of our being and it is evident that the Christian who exposes himself with a dozen mistresses is less danger of the destruction of his body than the man who [illegible]

after every prostitute he meets. Humanity sickens at the sight of suffering from syphilitic symptoms and few men outside of the medical profession have any idea of the number and malignancy of diseases owing their origin to this cause. The Japanese call diseases of this nature Kasa meaning a boil and when it affects the bones they call it hone Kasa or bone boil; our syphilitic rheumatism is the most excruciating of diseases by which the man that has yielded to vice is tortured as in a vice till his soul is separated from a frame that can no longer retain its grasp on life. During my residence in Japan

it was a common thing for cholera to prevail in that quarter of the town where these unfortunate women were kept and as they were carried out to their graves upon the hill-side it was a common remark with the natives "Ooshi wari musuma bakari" or "only a bad house woman"
The Government of Japan draws an enormous revenue from such sources and not only licences such houses but fosters and encourages them; somewhat after the manner in ancient times of farming out the revenue; and women are sometimes it is said, sold to those places by their parents without their consent; and taken amid their

sciams to a slavery worse than death by the officers of the Government
Medical science has done little to mitigate the evils of such a state of society and syphilitic diseases run riot from worse to worse
Their doctors attempt to cure certain diseases by burning with a red hot iron leaving great scars on either side of the back bone; which together with marks of various skin diseases and noses often eaten away give a gang of half naked coolies a most revolting appearance
In China the laws of health in regard to these things are violated with vom less impunity than in Japan

owing probably to the fact that the climate of China is much worse than Japan and endued the nation seems stamped with the impress of the violation of the laws of Nature
The Sandwich Islanders are too corrupt to continue and are dying out as a nation
In Paris it was stated by an officer of the Government that a woman is not permitted to play the whore until she is twenty one years of age and then must submit to a medical examination twice a week and have her certificate renewed
Such a regulation must doubtless tend to check the progress of syphilitic

disease; but the fact that one third of the children of Paris are said to be illegitimate makes it extremely doubtful if the Government of France is not encouraging men to violate the organic law of their being by holding out inducements for the indulgence of pernicious practices.

In England the soul is too often sickened at the sight of lewd and drunken women staggering on the streets opening their mouths in profanity and vulgarity; and even, sirs, in our own land and our own city our own hospitals bear ample testimony that he who violates his natures laws must pay the penalty

of death — not immediatily it may be but ultimatily it shall be — if he persists. It has been estimated that after women have entered upon a course of public prostitution the average duration of their existence is only three years.

When in the foot of man has trod
This evil bears the curse of God
Let him who would prolong his days
Forever shun such evil ways.

Celibacy

This is an abnormal condition of existence — a violation of the law of Nature — for ere yet the vines of Paradise were twined by gentle hands or Adam had conceived that Eden

could contain a fairer sight than those that everywhere surrounded him. God saw and said "It is not good that the man should be alone; I will make a help meet for him"

Two of the most common causes of celibacy are pride and poverty; and the ~~latter~~ former is less excusable than the latter. I once remarked to a distinguished officer of our Government "But, sir, surely you do not intend to return to the East without taking a wife with you" He replied "I only get four thousand dollars per year and I can manage to live very well on that but could not think of keeping up an establishment"

Again I met an old negro bowed beneath the weight of a hundred years and said to him "Uncle are you married?" He answered "O yes, massa, bless de Lord I've got an ole woman" I continued "But Uncle how do you manage to support her?" The old darkey turned upon me a look of compassion and surprise and concluded "Why laws a' messy can't we live together cheaper than we could live alone? dun when I gits sick she takes care o' me and when she gits sick I takes care ob her"

The highway to death is wholesome; and the highway to wholesome is celibacy.

The Romans were so fully persuaded of this as to enact that if a father did not give his daughter in marriage by a given time that he should not cast her off though she should be found with child. A law that might have a salutary effect upon society to-day because it would tend to reprove those as fining match-making mamma's and papa's who were not let their daughters marry the object of their affections but hold them back till they can get them properly "settled" over an "establishment"; and that too often after the fair flowers of their existence have been blighted by the night of disappointment, or laid

in licensed whoredom on the pillow
of a rich and reckless rake
Likewise will they not suffer
their sons to marry till their
feet stumble in the ways that
take hold on hell "till a dart
strike through his liver and he
knoweth not that it is for his
life" – and such ones are buried,
, and the cause concealed, and
community runs on the race of
riot
It has been stated that the proportional
death of single and married men
between the ages of thirty and
forty years is nearly two single to
one married man.

It need not be urged that Paul the Apostle advises to celibacy in certain cases for there are exceptions to all general rules and he concludes by saying "Nevertheless to avoid fornication let every man have his own wife and every woman have her own husband" It is this abnormal condition of things with which we are at present concerned and it is to prevent this fornication or whoredom of every degree that the teaching of Physiology and the utterance of the inspired writers so beautifully agree and we are found concluding with our Creator "It is not good that the man should be alone" but that every man should

have his own wife and every woman
her own husband
O woman last creation and the best
By thee our natures are refined and blest
Man, man is most to blame if thou shouldst be
Perverted from thy Eve-like purity

From thee the springs of life forever flow
From thee the words of hope to heal our woe
On thee our smitten sinking souls can rest
Approved of God and thee upon thy breast

Climate

There are conditions of atmosphere which no physiological precaution can prevent from exerting injurious or perhaps fatal influences upon the system so long as it is exposed

to the cause. The remedy is removal
There may be impurities in the water
that no individual has power to
overcome. The remedy is removal
There are places and positions
on earth where it may be impossible
for a man to provide those things
that are necessary to keep his
frame in repair The remedy is
removal

Mental excitement There may be
ills in life that startle and excite
the mind of man and seem to render
life a scene of suffering alone; but
each has his own burdens to bear
and should never allow his mind
to brood over past ills that can not

be removed or future difficulties that may never come. Let a man if he would avoid that mental excitement which is so injurious to our nature and preserve his mind and body in a state of health – let him "Fear God and keep his commandments for this is the whole duty of man"

Conclusion

And now, Gentlemen, I have submitted to you those sentiments which if observed by mankind would save our world from suffering sin and death to a larger extent than any present calculation can compute and I shall endeavor to conform my practice to my precept should you honor me with a Medical Degree

Calif. Feb. 1869

AN

Inaugural Dissertation

ON

AETIOLOGY

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

W. W. Waring

Of

Prince George's Co. Md.

Session of 1869.

Aetiology.

Aetiology as its name implies is that Science which treats of the causes of disease. It is derived from two Greek words aetia (cause) & logos (a discourse) — literally a discourse on cause. In order to discover the causes of diseases it is necessary to enter physiology upon pathological investigations.

Pathology is the history of disease. It is often used incorrectly by writers, some employing the term to express the essential nature of disease, others use it synonymously with morbid anatomy, & others again include therapeutics. Morbid anatomy is a department of pathology because it describes the physical lesions attendant upon disease which lesions no less than functional symptoms, belong to the phenomena of disease; & although not wholly constituting it, are still to be included in its history. Therapeutics is regarded as a division of pathology, because it has been found

convenient to treat of the remedies for disease in the same works which describe it, but they have no more connection with pathology, than morality has with crime, or any other remedial agency with the mischief it is adapted to cure. Pathology being the history of disease and each disease being marked by special symptoms & certain peculiarities which distinguish it from all others, there must be a pathology for each disease, or special pathology which comes first in Nature & is made up of individual facts, classified & arranged according to some nosological plan. General pathology collects these facts wherever found, which have a certain similarity, and arranges them according to their natural analogies, so that whoever examines them in this view will have no difficulty in appreciating them as phenomena of particular diseases.

General pathology treats of the causes of disease whether they exist within the individual or around him, of its forms, stages symptoms & terminations, describes its ravages & points out the best methods of investigating & interpreting the symptoms furnished by them, in all the morbid conditions under which they have been observed. In other words including whatever is common to disease in general & to particular classes of disease. One great object of general pathology is, to give the student or beginner a start, as it were to place him as nearly as possible in the position of an experienced physician. The word disease may be used in two different senses — in a general or a specific, we may say a man is diseased without expressing the manner in which he is affected or that a man has a disease which

at once shows the distinction between the two classes of disease, general & specific. The ancients taught that there were four humors in the body & that all diseases depended upon excess or deficiency of one of these. Sydenham thought disease consisted in a struggle between the vital & morbific principle &c. Broussais invented a doctrine in which irritation was represented as the source of every healthy vital action & its excess the essence of disease. A doctrine world renowned yet obsolete before its authors death. Those to whom medicine is most indebted it seems, have not been able to divest themselves of a tendency to go beyond the evidences of their senses & to pry into the inscrutable recesses of essential causes. Now the question arises which to my mind is unanswerable — what is disease? Notwithstanding

-ing the gigantic strides which the science of Medicine has made, we of a much more enlightened age, with all the advantages for investigation & observation we possess, are able to give us more satisfactory definition of the term than that of Van Swieten "that disease is a deviation from health." There is no more distinct limit between it & health, than between night & day. Yet light & darkness are terms habitually used to illustrate the most perfect contrast human mind can conceive.

We next inquire what is meant by a disease. It is of course a particular deviation from health, including the circumstances constituting that deviation, whether functional or organic. Of course it is impossible to retain in the memory all the circumstances, but to select those most frequently conjoined & uniformly present

and that not only to insure our remembrance but at same time to give a name to this group of symptoms or constant phenomena, so that he may have at command a concise expression by which to designate the disease — which name should not be drawn entirely from its real or supposed anatomical characters. This latter should enter into the short description used to define a disease, but the name ought to be taken from some constant & striking feature of the affection either structural or functional. When no change of structure can be detected by any of the means at our disposal, the definition should include the most prominent symptoms, as in the case of many diseases of the nervous system. The first alteration of the economy, upon which all the subsequent ones depend, is undoubtedly the essential element of the disease, but as this is not often discov-

-erable, the first tangible link in this chain of causation must be used instead. This will generally be found to be a notable change in the solids or fluids of the body. If such change cannot be detected, the most characteristic symptoms should furnish the title, & finally if death immediately follow the application of the morbid cause. the name of the disease should be the cause of death. As examples of the first class may be cited pneumonia, consumption, laryngitis &c. Of second - epilepsy typhus fever diarrhea &c. of third death from lightning, terror or prussic acid &c. It follows from this that the names of diseases must change, as our knowledge of their causes &c. increases.

This brings us to the causes of disease or aetiology proper. The word cause is used in two senses. In the one it signifies that inviscible pow-

-er & mysterious bond which connects two successive events not the antecedent merely of an event, but its efficient antecedent or that without which it could not have taken place. For example when undigested food excites convulsions, or a splint-er in the flesh inflammation, it is evident there is some power intermediate to the initiating & its effects in both instances, for undigested food does not always induce convulsions, nor splinters in the flesh inflammation. This power may be conjectured to be a pecu-liar [illegible] [illegible] [illegible] [illegible]. The other sense of the word cause is the only one which here con-cerns us. It has been defined "as the antecedent or concurrence of antece-dents upon which a phenomenon is unco-ditionally & invariably present." Under this definition it becomes necessary to regard as those which are present in the majority of

instances. Diseases arise under circumstances so wholly dissimilar that different and even op-posite causes sometimes must be assigned to the same affection. That is to say different causes appear to produce identical re-sults, as diarrhea may follow the application of cold to the surface of the body, or the presence of some irritating substance in the bowels, or an impression upon the mind. In each case the apparent cause is different. But beyond doubt the real cause may have been the same, & the diarrhea has been occasioned by the sudden plenitude of the blood vessels of the alimentary canal. In aetiology as in other departments of medicine there can only be an approximation to truth. It is impossible to predict with certainty, that a particular effect will result from the application of a given cause & equally so to assert which one out of all possible influences may have given

vise is a particular case of disease, unless those immediately antecedent to the attack be minutely detailed. In classifying the causes of disease Wood considers that into predisposing and exciting the best. Marshall Hall divides causes of disease into General & specific, & subdivides his general into predisposing and exciting, & his specific into contagious & non contagious, We will consider that into predisposing & exciting to answer best, subdividing the predisposing into general & special & the exciting into general special & specific. Predisposing causes are those which produce in the economy, certain changes which predispose or prepare it for the development of diseases. They are usually slow and gradual in their operation & are not always cognizable, except by their effects, such are influence of climate, sex, temperament, habits of life &c. General are those acting on many at same time, Special those acting on a single individual

Exciting causes are those from which disease more directly springs. General exciting causes being those which give rise to disease without determining either its nature or seat. Special those, which while they occasion for the most part definite morbid states, are not the only ones from which those states arise, such are nearly all those causes of disease, which act according to physical or chemical laws & whose action can therefore be explained by those laws. Specifics are those which not only engender distinct disease, but also & unlike the others are the only causes of the maladies which follow their application respectively; such as miasmata & the several sorts of virus. The greater number of predisposing causes consist in certain prevalent constitutions of the atmosphere, or in certain local influences, either natural or accidental. A high temperature favors activity in all the peripheral portion of the circulation, and when long

continued give rise to inflammation of the brain, skin & digestive organs. Great heat if the air remain dry is much less prolific of disease than when accompanied with humidity, for the latter rouses the disposition to inaction, which heat alone excites is considerably augmented, the skin no longer able to part with the moisture of the body & by its evaporation to maintain a tolerable temperature is continually bathed in perspiration, the fluid which would otherwise have escaped by the skin is poured forth by the mucous membrane of the bowels & gives rise to various forms of intestinal flux, diarrhoea &c. On the other hand acts with decided violence on the organs of respiration, possibly because their functions are notably augmented by a low temperature & the combination of cold with moisture is more prolific of disease, than any other cause or union

of causes whatever, in confirmation of which fact; we would call attention to the greater mortality during the winter & spring, than during dry summer months, except perhaps when an epidemic prevails. Climates are influential in producing disease. They are divided into cold, temperate & hot corresponding to the three great zones of the earth in each hemisphere. The latitude of a place however is not always a true index of its average temperature. For instance the climates of Lisbon is very different from that of Philadelphia, although both lie under the same parallel. Such contrasts are however more striking between places on the eastern coast of America & the western coast of Europe, but if the former be compared with the corresponding portion of the Asiatic continent, the same climate will be found in both near the same degree of latitude. The inhabitants of cold climates are subject to the immediately unsatisfac-

-ious effects of intense cold, such as freezing of the extremities, - nose & ears, & inflammation of the eyes & the diseases arising therefrom, or from accidental causes, are apt to assume a low type. The barrenness of the soil & the short, but-cold during which it can be cultivated deprives them almost entirely of grain & vegetables, limiting their food to flesh principally salted, hence scurvy is so frequent & fatal a malady in cold climates. The native of the extreme North, cannot remove to a more temperate region without experiencing all the mischiefs resulting from abstinence of his habitual stimulants & as an antidote he makes use of alcohol & concentrated food as when at home, he is very apt to be attacked with diseases of a seemingly inflammatory type. In like manner the native of temperate regions in migrating to tropical climates is subject to powerfully debilitating influences, particularly if he attempts to carry with him his

former habits. The countries of Europe which are considered temperate - are between 45° & 63° of North latitude & within these limits the human race attains its most perfect physical developement, & all that it does is marked by energy. And so of its diseases. They are mostly sthenic, characterized by powerful reactions, & the inflammatory type & tolerate antiphlogistic treatment decidedly better than the natives of either torrid or frigid zones, & that not unfrequently when they prevail epidemically. Affections of lungs & heart with rheumatism, are more prevalent in these than in other countries. In America the limit of the temperate region is different; its southern boundary must be placed about 39° on Eastern side of the Alleghanies & west of them in latitude 35°. within which extent, inflammatory affections prevail owing to the great vicissitudes of temperature, which are supposed to be greater than in any other part of the world. The

difference between the mean temperature of the hottest & coldest month in year 45° in Philadelphia and only 31° at Paris. The mean annual temperature is in torrid zone between 70° & 80°. In Florida the diurnal change is sometimes extreme, the thermometer at mid-day in shade being 90° and just before day falling to 45° or even lower. Nocturnal variations of temperature are among the most powerful exciting causes of disease in hot climates. The inhabitants of hot regions are incapable of much exertion and of indolent habits, & are generally of small stature. Their passions are strong, but quickly over. Their ordinary food is vegetable. & even for proper digestion of these, they require artificial stimulus, which has been sometimes supplied by Nature in the shape of various spices & condiments only found under tropical suns. The dangers of a hot climate to those accustomed

to a lower temperature are greatly aggravated by ignorance & by imprudent habits of life. Stimulating food & drinks by destroying the tone of the stomach, augmenting nervous susceptibility & increasing the biliary secretions beyond the wants of system, cannot fail to produce disease.

It is by comparing the diseases of countries most dissimilar in their temperature that the most striking illustrations of the morbid influences of climate are to be obtained, but others not less demonstrative of the reality of such influences are constantly met with in observing the effects of comparatively insignificant changes of residence as from the mountains to low lands from the interior to sea side & conversely.

There are several other conditions which may be ranked among general predisposing causes, since they operate as well upon masses as upon individuals, such are wet clothes, which may

g. ie to various forms of ill health in a large part of an army or in a ships crew, at the same time bad food foul water, want of fresh or fresh vegetables the emotion of fear or anxiety chagrin or disappointment are productive of disease. The social condition of a people has a distinct influence on their diseases. This is nowhere so strikingly seen as in the prevalence of insanity among civilized nations its rare occurrence among barbarians. In the former its exact proportion to the degree of liberty possessed by them. We of the United States formerly the freest people politically in the world, also occupy a sorrowful preeminence as having furnished in proportion to our population more cases of insanity than any other nation. We will now enter upon the consideration of special predisposing causes which are for the most part, peculiar to us

individual, including all that he is by virtue of birth; age sex &c. condition of life, residence, clothing, food & other circumstances called hygienic; in other words this class comprises all natural & acquired tendencies to disease. Hereditary predisposition to certain diseases is that which is apt to descend from parent to child. Watsons says on this subject. "we must distinguish between susceptibility & predisposition or tendency to disease. In one sense all persons are born with predisposition to most forms of disorder, No one is protected by Nature from inflammation, when the causes of inflammation come into play. But there are certain complaints we may be heard in this respect from the others, which complaints some persons have a tendency to & others have not; to mention some of these diseases, scrofula, gout, mania & I may add.

spasmodic asthma". To the above mentioned diseases of the eminent Watson we may venture to add cancer, epilepsy, gravel & apoplexy. It is not necessary for either parent to be suffering with a transmissable disease at the period of conception or child-birth in order to its subsequent development - in general the predisposition only is transmitted & not the disease itself, for this latter does not usually make its appearance until adult life & even often appears to be the result of habits of living or other causes, competent of themselves to produce it. The diseases of the mother are thought to be more certainly transmissible than those of father & frequently they only affect its daughters & those of father the sons. Again the morbid influences seem to pass from one sex in parents to opposite in children. It is another fact in the history of hereditary diseases, that many have a tendency to swoop

themselves at a period of the child's life, which is most likely to have been that at which the parent was first attacked. The melancholy spectacle is not unfrequently presented of all the members of a family being cut off by the same disease upon arriving at a certain age. The age at which the hereditary tendency displays itself in the development of a particular disease depends upon the nature of that disease. None that is clearly hereditary, except the glandular form of scrofula, becomes [illegible] anterior to the age of puberty. Subsequent to this epoch, we meet with first tubercular consumption, epilepsy & insanity; in early part of adult life emphysema of lungs & hypertrophy of heart; and somewhat later gout gravel & apoplexy. Age is not strictly speaking a cause of disease, but each epoch is more liable to some diseases than others, & may therefore

be regarded as predisposing to them. & Hydrocephalus & tuberculous meningitis are peculiar, frequent in infancy, numerous disorders proceeding from dentition, cutaneous eruptions as scarlet fever &c, cholera infantum & worms to period of childhood; nervous disorders in the adolescent period. Adult life is less remarkable for its liability to particular diseases than for its susceptibility to all. Yet this period is distinguished by the frequent occurrence of pulmonary & intestinal affections & those of genital organs. In the decline of life & old age generally we pay the penalty of having abused or overtasked our organs. Most of the maladies incident to that period are due to prolonged and continual or habitual neglect of hygienic rules, for instance occasional constipation, not attended to becomes habitual & obstinate, and piles or fistulo in

and succeed, at same time the brain is liable to be attacked with softening, born by hemorrhage or its proper functions degenerate into mental imbecility.
Many of the diseases of this period it is true may depend upon unavoidable exposure to exciting causes or upon natural decay of the powers of life, but in the majority of instances a prudent life would have mitigated & probably prevented them.
The sex of an individual determines or disposes to a certain number of diseases. Besides those which especially affect the reproductive organs, some others are more apt to attack one sex than the other. Gout & stone are more frequently found in males, & from their being oftener exposed are most liable to rheumatism & acute inflammation of lungs & bronchi. Females on the other hand are more subject to chorea & other

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nervous affections & to phthisis. Certain types of constitution called temperaments, exert some influence in predisposing to certain diseases. The ancients mainained four, sanguine which consisted in giving a marked inflammatory character to diseases & in predisposing to plethora & hemorrhages; bilious temperament which was not a physiological condition & did not exist in an individual until the actual occurrence of an hepatic disease; lymphatic created a tendency to mucous & serous fluxes, catarrh, tuberculous & scrofulous affections of lungs, joints & skin; & were all chronic, slowness of evolution being one of the most striking characteristics of this lymphatic or phlegmatic temperament; and the nervous temperament which was directly opposite to last & was marked by quickness & susceptibility. It predisposed to all forms of disease which affect-

-ed the nervous system, but particularly to functional disorders, to insanity convulsion, & neuralgia for example.

Idiosyncracy is a peculiar susceptibility to or immunity from certain diseases on the part of an individual, including all personal peculiarities, & among them such as relate to the action of medicines. The term is frequently applied to acquired peculiarities, but should be restricted to those implanted by Nature. The hemorrhagic is one of the most remarkable, by preventing the arrest of hemorrhage, it has made dangerous & even fatal such slight injuries as the bite of a leech & extraction of a tooth. Habits of life are among the most of the causes under notice, those who take exercise in the open air are most liable to inflammatory disorders, while those who lead a sedentary life to affections of the

Peculiar employments often occasion particular diseases, riding horse-back predisposes to hernia, singers are predisposed to affections of larynx. House maids in England to disease of knee joint. Chimney sweeps to cancer of scrotum. Hair frost & drink are also among the specific predisposing causes of disease. Insufficient food, imperfectly nutritious & too copious & nutritious diet may also prove injurious. Water as a rule is the only safe drink, still it can be used intemperately as well as alcohol. When taken immoderately it impairs digestion, and nutrition, and renders the system an easy prey to attacks of every severe disease, by depriving it of its elasticity and vigor. Dress is by no means unimportant as creating a predisposition to disease. Garments should always be worn

to suit the temperature those which are too tight are calculated to impede the circulation and should be strictly avoided. The same may be advised of those which are too warm or not sufficiently so. Fatigue is still to be considered with this class of causes of disease, when excessive although it cannot be said actually to bring on any particular disease, renders the system very susceptible to whatever morbid influences may be present. The exhaustion produced by loss of sleep is equally capable of predisposing to disease. Over indulgence in sleep by diminishing the activity of all the functions, favors plethora with all its serious consequences including congestion & other disorders of the brain. Previous disease with the exception of those affections which recur but once in same individual have a tendency to re-

tion It is very uncommon for a person to experience only one attack of spasmodic croup, but hysteria &c. Every organ that has been once inflamed is peculiarly liable to repeated attacks of inflammation. It is probable that among uncivilized nations, the structure of human organism is perfect in reality as well as plan, but this unfortunately is not the case among the more enlightened for we find certain maladies evidently depending upon the congenital or acquired deviation of organs from their normal type or upon the manner in which their functions are performed — thus the manner in which the testicle descends predisposes to hernia, the natural position of the uterus exposes it to be readily displaced. The exaggeration of any function predisposes to disease, an harassed mind is a ready prey to insanity, all the secreting organs are prone to organic

disease, when the quantity of their discharges by inducing debility exposes to various forms of disease. By sympathy one disease predisposes to another, there being a general reciprocal dependence of all organs, one upon another so that a derangement can hardly take place in one without its being responded to by the rest. But this is not the point at present under consideration. It is rather the liability of two organs to be habitually affected in succession by a disease commencing in one of them, thus injury in one mamma or ovary is apt to produce it in the other. Organs which lie in contact frequently suffer from each others diseases & finally there appears to be a sympathy between some parts which have no functional community, nor any direct anatomical connexion, as between the parotid gland & the testis, liver & right shoulder.

the brain & stomach &c.

We will now proceed to consider the exciting causes of disease. General. Special & Specific. General exciting causes include all those which directly develope disease without determining its nature or seat, and consequently all which have been enumerated as predisposing causes, for when their action instead of being feeble and slow is sudden & energetic, they not only promote, but actually determine some morbid state. Although having already mentioned most of the causes which come under this division, we will reconsider a few of them together, with some not yet alluded to.

Cold if not for a considerable length of time will destroy life, & if applied to a part for a shorter period will benumb or paralyse it. If it be applied to one portion of the surface only, the nearest or-

-gan will be in most danger. The throat lungs & large joints are most readily affected by this cause, the former in consequence of the upper part of the trunk perspiring more freely than any other part of the body, & the last probably because they are not well covered with muscles or because the fibrous tissues investing them, contain but little red blood & therefore generate but little heat. Pain & mental emotion may be included under this head. The brain, the instrument of the mind, at the same time presides over and controls the functions of all the other organs. Its own disorders can hardly fail therefore to affect them. Every one must have felt, how suddenly digestion may be suspended by disagreeable tidings or events. & can readily understand the pernicious influence of habitual grief upon the functions of the digestive organs. Terror is apt to excite-

in a direction, bring on miscarriage, suppress the menses, or occasion frequent voidance of urine. High wrought anxiety may have the same effect. During the preliminaries prior to the battle of Winchester Va. in our recent unsuccessful struggle for independence, several of our company who had never before been under fire, were almost continually leaving their places in the ranks to empty their bowels & one remarkable instance of a private of Co. C. whose bowels were in a perfectly healthy condition had no less than four passages in half an hour. Anger often brings on a convulsive attack & when suppressed, has been known to produce a case of universal jaundice in a few minutes. Special exciting causes, as has already been remarked, embrace mechanical & chemical causes & poisons. Mechanical causes are innumerable. We will then

-fore only mention a few of the most common.
as instruments used to wound, falls against
hard substances, obstacles to the entrance of
the air into the body, foreign substances in
the oesophagus, windpipe, nasal or auditory
passages vagina, urethra bowels &c.
Chemical causes are also numerous
and include all which destroy the natural
organization of a part by virtue of chemi-
-cal affinity. Such are metals at high
temperature, boiling liquids & caustics, whether
or solid or liquid, acid alkaline or sa-
-line act in this manner. Some of them
like corrosive sublimate and the arsenical
preparations, from their usually producing
their effects after being taken internally, are
ranked among the poisons. It is difficult
to frame a definition of these agents. That
of Fodéré is sufficiently precise. He
considers poisons to be those substances

which are capable of altering or destroying, in a majority of cases, some or all the functions of life. They are usually divided into irritants, narcotics, narcotico-acrids & septics. Thomas in his Medical Dictionary gives only three divisions. narcotic, irritant & sedative, subdividing his sedative and narcotic into acro narcotic & acro sedative, including those which sometimes produce irritation, sometimes narcotism or sedation & sometimes both together. gives stramonium as an example of the acro narcotic, & aconite of the acro sedative divisions. The class of irritant poisons says Christison "comprehends both those which have a purely local irritating action & many which also act, remotely, but whose most prominent feature of action is still the inflammation they excite wherever they are applied". The chemical agents already mentioned, can-

chlorides, iodine, chlorine &c. are of this class. Narcotics on the other hand, produce little or no effect upon the part to which they are applied, but act through the medium of the nervous system, occasioning various perversions of the intellect, sensibilities & muscular power, and generally threaten or destroy life by inducing asphyxia. The most prominent among them are opium, hyoscyamus &c. to which may be added, carburetted & sulphuretted hydrogen gases. Narcotic-acrids include those which possess a double action the one local & irritating, the other remote upon the nervous system, by which latter indeed they generally prove fatal. Viz. Belladonna, Stramonium, Strychnia &c. Septic poisons are those which are generated by putrefaction, give rise to affections which are characterized by a typhoid

or adynamic state are often complicated with gangrene & generally tend to a fatal issue. The pernicious matter may be introduced into the economy along with the food or through the lungs as in camps or crowded & badly ventilated hospitals &c. or it may be inoculated through a wound by the circulation, as so often happens to those engaged in anatomical researches. Venom a liquid secreted by certain animals may be included in this division, among the exciting causes of disease. The rattlesnake & copper head among serpents, bee, wasp, & hornet among insects are the most known representatives of the venomous bite in the United States. Dr. Harbaugh of Philadelphia, differs a little from us in his classification of poisons, he denominates prussic acid aconite &c. unclassified poisons. They arrest life

so suddenly as to prevent the administration of antidotes generally even if we were so fortunate as to possess any. None as yet have been discovered that can be relied on, although many are said to act advantageously if given in time &c. We may now proceed to speak of the Specific Causes of disease, such as infection, animal secretions & emanations Contagion. Medical constitution, Endemic & epidemic diseases. By some the terms infection & contagion are used synonymously, & if reference be had to the etymology of the words the usage is to a certain extent correct; but since it is admitted that some maladies are generated spontaneously, while their further propagation by contagion is altogether accidental and that others are in nearly every instance disseminated by contagion, while their origin

from atmospheric or non-animal sources as exceptional, it seems natural that we should not include both modes of propagation in the same description. We have therefore determined to consider infectious agents proper as those which consist almost entirely of decayed or diseased organized substances & animal emanations or secretions. Some have already been partially referred to under the head of poisons. They are found to exist mostly in marshy soils, around slaughter houses, common sewers, in dissecting rooms grave yards & those places where a large number of living persons are crowded together, particularly if the effluvia of their excretions taint the air, such places are called centres or foci of infection & their action is most powerful in tropical climates, & during the warm seasons of the temperate. The insalubrity of the

neighborhood of marshes has been known in all ages. The late Prof. J. K. Mitchell of Philadelphia urged the hypothesis that the material cause of malarial fevers is a minute vegetative organism, whose substance or emanations enter the body. Dr. Salisbury of Ohio has recorded recently some observations & experiments tending to show that minute cryptogamic plants of the family of palmellae, abounding over the surface of marshes, can generate intermittent fever when transported to localities otherwise free from it. Watson quoting the remarks of Dr. Ferguson says that in the most unhealthy parts of Spain, we may towards the close of summer in vain look for marshes, pools or even vegetation. He also says at Lisbon the Tagus is two miles broad & separates an healthy from an unhealthy region, on one side there

are water courses among hills, with rocky foundation &c. which is healthy. The other is flat, sandy & dry superficially & is most-bituminous, Moreover in and near Lisbon on the healthy side, there are numerous gardens, where they keep water, during the three months absolute drouth of the summer season in stone reservoirs, These containing water in the most concentrated state of foulness & putridity are placed close to the houses & sleeping rooms, the inhabitants literally live & breathe in their atmosphere. Yet no one ever dreamed of fever being generated among them from such a cause, though the most ignorant native is well aware that were he only to cross the river & sleep on the sandy shores of the Alentejo, where a particle of water at that season has not been seen for months, & where water being absorbed into the sand as soon

as it fell, was never known to be putrid, he would run the greatest risk of being seized with fever. I can only say after giving the above from such high authorities, that in my own neighborhood, from my limited experience I have observed that malarial fevers so called are most common in the vicinity of our marshes & low damp uncultivated grounds, & that where the land is tilled & crops are growing luxuriantly, it is comparatively unknown, & yet the same sections which during a period are uncultivated & allowed to grow up in rank weeds &c. retaining the dew till late in the hottest days, are very productive of ague, but destroy those weeds by an annual ploughing & afterwards introduce some crop & we enjoy a season of security or immunity from them.

Animal secretions & emanations generally

give rise to maladies, capable of propagating
itself by contagion. The most usual from
them being typhus fever, dysentery &c. Hippy-
-crates mentions that in one of the wards of
the Stoics Dieu the usual number of patients
was two hundred, while only that number was ob-
-served there was no sign of infectious disease.
but having to increase the number to five hundred
& fifty - a peculiar factor became perceptible
& many patients fell victim to hospital gangrene
and dynamic fevers. It is chiefly through the
lungs that infectious agents are introduced into
the economy, they are absorbed into the blood
which it quickly vitiate & thus occasion
the subsequent symptoms. Two considerations
render this supposition probable; the one that
in the class of diseases now more particularly
under notice, the blood undergoes sensible
alterations; & the other that in constitu-
-tional contagious affections properly so -

called & which have so close an analogy with infectious disorders it is difficult to imagine any other mode of origin than through a change in the circulation. Contagious diseases strictly so-called that is to say which cannot be traced to any other source than communication mediate or immediate with persons already affected by them & which cannot be referred to any atmospheric or other external cause or combination of causes, but only to the preexistent cases of the same kind. Hence a particular disease arises from every different contagion. The contagion of small pox, of syphilis, of scarlet fever, or rabies produces its own disease and no other; it is a specific virus or influence, perpetuating a malady, always presenting the same essential characters. Among these diseases are several whose normal mode of spreading is by con-

lagion, yet do sometimes arise spontaneously. This is the case with small pox, rabies and glanders. The last two being of spontaneous origin among the lower animals from which they are communicated to man. There are others again distinctly contagious, which like scarlet fever & measles are usually thought insusceptible of transmission by artificial inoculation, & are primary syphilis, which so far as we know arises in no case without contact. But the degree of contact necessary for communicating contagious diseases is not the same for all, it may be direct or indirect. It is direct when the virus is conveyed immediately from one person to another & this takes place in several ways, by proximity to the sick as in his chamber when the air is saturated with emanations from his body. In this way typhus fever, small pox & other eruptive fevers.

are propagated; again by direct contagion as in attending upon or sleeping with a person ill of a contagious disorder, & again by contact of a fluid containing the specific virus, with the skin or mucous membrane & more certainly when these surfaces are abraded or the morbid fluid is introduced by inoculation. Rabies, vaccine & syphilis are communicable in no other way. Contagion is indirect when it is effected by substances which are capable of imbibing and retaining for a considerable time not only the palpable & contagious virus, but the invisible emanations from their bodies. And let it be understood that such substances so impregnated communicate the disease by contagion not by infection. For instance a cargo of rags comes into the port of Baltimore from Tera Cruz. & on being discharged creates disease in all the neigh-

berhood of the vessel, if the disease thus originating, is like one which was prevalent at the place whence the cargo came, the rags are a source of contagion. If there is no such similarity to be discovered at Vera Cruz then the newly arisen malady must be attributed to the filth &c. of the cargo, which is in that case a source of infection. It is a singular phenomena connected with contagious diseases proper, that some of them do not attack the same person a second time after having thus to exhaust the susceptibility of the patient to contract them. Such are scarlet fever (often) small pox, measles, &c. all of which are of extremely rare occurrence a second time in the same individual. It is scarcely less surprising that syphilis, which resembles the diseases first mentioned in so many other points, should be unlike them in this, and that a person

who has contracted the disorder, so far from enjoying any immunity from it in the future is even more likely than ever to contract it anew. Dr. Hosack remarked on this subject "If we are to understand by a contagious disease, one capable of being transmitted by contact, nearly all of those are so which have heretofore been spoken of as proper infections, but if by that term is intended such an affection as is ordinarily communicated by contact, it should be applied to those only which are inoculable not such as arise under the influence of local or general atmospheric conditions. The circumstances which render infectious diseases contagious are bad ventillation want of cleanliness, crowding of the sick together, allowing their excretions to remain in the apartment, & along with these, a calm moist state of the atmosphere.

tion is a peculiar characteristic of both infectious & contagious diseases which is called the period of incubation. Thus a person who has passed a night in a malarial locality, may betray no symptoms of having contracted disease until several days or weeks afterwards, or the virus of small pox, vaccine, syphilis or rabies is introduced into the system & yet for several days & in the case of the latter several months or years may elapse without the slightest indication of the disease which is subsequently to appear. How the virus acts, during the period appears to be entirely unknown although some suppose it lies dormant as it were until some exciting cause, change of atmosphere or something of the sort calls it into operation. The preceding remarks form a necessary introduction to a general notice of several remarkable

modes in which infectious & contageous causes operate or the circumstances under which they act upon a large number of persons. The first of these we shall mention is the medical epidemic constitution. It has been correctly described as a general tendency by virtue of which nearly all diseases, at a particular time & place, no matter how different their seat & character assume to some extent a common aspect. Thus inflammation of the brain or bowels may both be complicated with bronchitis, which complication ~~which~~ is then said to be the effect of medical constitution. In like manner when various diseases are attended with symptoms which indicate disorder of the liver, the medical constitution is said to be bilious & we have bilious pneumonia, bilious remittent fever or bilious pleurisy &c. The medical con-

-stitution must not be confounded with epi-
-demic diseases, for the former is evinc-
-ed by a common symptom or symptoms
in numerous diseases, otherwise dissimilar
to one another, the latter is a definite
or peculiar malady. Endemic & epi-
-demic diseases are derived from the
Greek en demos in or among the
people & epi demos upon the people,
the former indicating a prevalent dis-
-ease arising from some local cause;
referring to the place of disease as Yellow
Fever at Havanna; the latter produced
by an atmospheric or other general agency
operating upon the inhabitants of an ex-
-tensive region & particularly refg. to the
extent of the disease — as Yellow Fever
prevailed epidemically in New York & Nor-
-folk — the cholera prevailed epidem-
-ically over nearly the whole civilized

world. Another point of difference is that one is to a great extent permanent, or recurs periodically, in the same form, because its causes operate steadily, or with regular intermissions, while the advent of the other is irregular & uncertain & cannot be foretold any more than its probable form, extent, course duration or mortality. Most of the diseases which have been already described as infectious belong to the class of endemic maladies, more particularly those of malarial origin, such as the different forms of remittent & intermittent fevers. But there are others as endemic in portions of France or Switzerland. Goitre prevails in the same situations & in parts of Spain. Plica Polonica from its prevalence in Poland. Elephantiasis in the West Indies, Cholera Infantum

-cum in the United States, &c are in some-
sense endemic or peculiar to countries or
districts, but they can generally be traced
to causes which are well known & tangible
in which respect they differ entirely from
those before enumerated. Epidemics pro-
-perly so called are for the most part
independent of local causes, they occur
at uncertain intervals, prevail for in-
-definite periods & in general at-
-tack the inhabitants of different re-
-gions, however dissimilar in climate
& the character of the people & what-
-ever the season of the year. The most
remarkable among them for the wide ex-
-tent of its ravages, are cholera and
influenza, the former of which start
-ing from its lair in Bengal in 1817
has since that time made the cir-
-cuit of the entire globe, seizing its

prey in every clime & season alike. Epi-
-demics which like the above with ty-
-phus fever plague &c, prevail ex-
-tensively and are denominated pesti-
-lential. There is a combination of
causes which has especially been ob-
-served to occasion epidemics of ty-
-phus fever & dysentery, which is fam-
-ine among a people laboring under
incubat depression & poverty, a combi-
-nation of which some years ago worked
such fatal mischief in Ireland & even af-
-fected this country by pouring upon its
shores large numbers of persons laboring
under the typhus fever engendered by the cause-
-es in question. It has occasionally hap-
-pened that ergot mixed with grain has
produced gangrene, abortion &c among the
inhabitants of considerable districts. But
this is a case of general poisoning rather.

in an epidemic disease. Not only do general causes productive of debility favor the development of epidemic diseases, but weakness in whatever manner occasioned is the most evident cause of individuals being attacked by the reigning disorder. The fact of the disproportionate mortality among the drunkards of this country during the prevalence of cholera and among the old and feeble during influenza must be familiar to all who have paid any attention to the subject. It is also a fact established by universal observation, that none contract epidemic diseases more readily than those who live in constant dread of their attack. There is a feature common to many epidemic diseases which must be mentioned, it is the faculty they possess of taking the place either in whole or part of the sporadic dis-

-eases which ordinarily occur in the re-
gions where they prevail. The statistics
of those cities show that the mortality
is not greater than that of others & that
if they suffer more from epidemic dis-
-eases, fewer of their inhabitants die
of the sporadic. Prof. Stone of New
Orleans who honored our University
last winter with a short but able lec-
-ture on Yellow Fever mentioned this fact
particularly, saying that during the time
the fever was prevailing he was sel-
-dom called to any other case of dis-
-ease. Endemic & Epidemic diseases
are propagated in one or both of two
ways, by infection & contagion, that is
to say immediately by an atmosphere
or other analogous cause, & directly
or indirectly from the bodies of those
who received the disease from that cause.

It hence becomes a difficult question to determine how far a particular epidemic is contagious. The very fact that a large number of persons are attacked argues a predisposition on their part to it. It would therefore appear impossible to decide whether they contracted the malady from its original source, or from some persons around them already attacked. We are not entitled to conclude that a disease whose ordinary mode of propagation is by contagion, can be engendered in no other way, it is evident that at some time or other contagious diseases must have sprung from a concurrence of natural causes, for there certainly was a period when they did not exist. If such causes were once adequate to their production, it cannot be denied that they may still be.

so and that hence it is impossible to affirm precisely what part is borne by infection and what by contagion in the spread of epidemics. When travellers and the first settlers affected with small-pox came among a tribe of Indians on our recently settled continent and one after another of its members was attacked by the disease & nearly the entire tribe thus miserably perished the proof that the malady was contagious became complete. But this high degree of evidence cannot often be obtained especially in large cities, where individuals may be attacked simultaneously who believe they have held no intercourse with those previously sick, but who may in reality have contracted the disease from them through indirect channels. Under such circumstances the proof of the contagion

consists in the more frequent occurrence of the disease among the nurses, attendants, & families of the sick than elsewhere. and it may be added among the patients of the physicians who have charge of the greatest number of those suffering from the malady in question. Other things being equal, the extension of the malady should be in proportion directly to the degree of communication with the sick. Those who are much in their apartments are more liable to suffer than occasional visitors. But sometimes nurses & other constant attendants have escaped altogether, or with slight attacks, while those who were occasionally present have been severely ill. It is supposed that the class of persons who appear to enjoy this partial exemption, become as it were acclimated by habitual resi-

-dence in sick rooms, or rather I think to their having no fear of the danger. This sense of security may be the great safe guard of Physicians in the perilous attend-ance upon those ill of contagious dis-orders. The converse of the above confirms by negative proof what it es-tablishes by positive. Thus if it be observed that no persons but such as hold communication direct or indirect with the sick are attacked & that fast in proportion as the intercourse is restrict-ed, between the immediate locality of the disease & the adjacent districts, the progress of the disease is stayed, that the removal of the sick to a distance is followed by a cessation of the mal-ady &c. Then upon these grounds alone there is a fair presumption that the dis-order is contagious & if in addition

the aforementioned direct evidence can be obtained, then no candid mind should entertain a doubt of the contagiousness of a diseases. I will conclude by remarking that the importance of the subject and want of experience have compelled me to give the ideas and opinions of others for the most part. I feel deeply and regret exceedingly my total inability to do the subject justice but hope my first unworthy efforts may meet the approbation of the Faculty of the University of Maryland.

Respectfully &c,
W. M. Waring.

AN

Inaugural Dissertation

ON

Phthisis Pulmonalis

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

[illegible]

Of

[illegible]

Session of 1861-2

Intellectual Illustrations

Diseases of the airpas-
ages have been since the
[illegible]
treat D medical [illegible]
[illegible]
[illegible] function of
[illegible] function of respiration, it
is not a matter of wonder that
so much time was attributed
[illegible] time. It was not
[illegible] until the beginning of the
present century [illegible]
discovered auscultation & percussion
as [illegible]
[illegible]

from one another. but I believe

that the [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

in charge — whether it was

[illegible]

[illegible]

[illegible]

the aid [illegible]

[illegible]

[illegible]

[illegible]

these invaluable aids the Steth-
[illegible]
ists could name the disease,
mark its stage & progress.
[illegible]
of his remedial agents with
[illegible]
hope to success -
[illegible]
upon
[illegible]
Treating in the whole catalogue
[illegible]
[illegible]
[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] quotes are not

from its ravages - while

very mention of its name

[illegible]

[illegible]

[illegible] is Petitions

[illegible]

[illegible]

claim [illegible]

the cure of [illegible]

which are
tributary to
receiving
those in
vail spidemicae
are statistics
of the people in
our country amounting to
sixty eight millions,
in each year with this disease

[illegible] of which [illegible]

[illegible] same.

[illegible] breathing - [illegible]

[illegible]

[illegible] expressive breathing, viz., [illegible]

[illegible]

[illegible] in the pulmonary tissue

but it is objectionable [illegible]
[illegible]
is alone the cause of the disease
[illegible]
ate researches of [illegible]
logical anatomy [illegible]
[illegible]
extinction of pulmonary [illegible]
[illegible] to arise
[illegible]
tubercles, which become equally
[illegible]
[illegible] and in fact that
[illegible]
[illegible] Pathological [illegible]
[illegible]

[illegible]

[illegible] as [illegible]

[illegible] tuberculous, and [illegible]

[illegible] regarded as tuberculous. [illegible]

[illegible] sections of [illegible] with

[illegible] the [illegible]

[illegible]

[illegible]

[illegible] it

[illegible]

[illegible] as they are specimens

[illegible] tuberculosis & [illegible]

[illegible] it expresses nothing [illegible]

[illegible]

in the patient [illegible]

[illegible]

[illegible]

[illegible] found in the lung tissue. [illegible]

is now held to be but one [illegible]

[illegible]

[illegible] tubercle from the [illegible]

most usually found in [illegible]

[illegible]

[illegible] influenced however by [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] consist of irregular-shaped [illegible]

[illegible] food [illegible]

[illegible] tance. Chemically it is composed

[illegible] of [illegible] the [illegible]

[illegible] varying with the age of the

tubercle — The fibrous tubercle so called is

[illegible] undergone fatty degeneration or it

[illegible]

[illegible] nature of tubercle are these.

— that it is [illegible]

[illegible] like other neoformations

[illegible] connective [illegible]

[illegible] is [illegible]

[illegible] cells are so close [illegible]

[illegible] The fatty degeneration com-

[illegible] tic. this part being

[illegible] The vitreous in

[illegible] as well also are [illegible]

or accumulation of blood produced by con-

[illegible] congestor-

[illegible] of fluids [illegible]

[illegible] a material which

[illegible] of that vital power of

[illegible]

Pulmonary tuberculosis is a con-

[illegible] tional disease & the formation

[illegible] cle in the lungs is

[illegible] Pettenkofer, a

[illegible] cannot ever be accurate

[illegible]

[illegible] oxygen

I [illegible]

[illegible]

[illegible]

[

[illegible] ation to this [illegible]
of the College [illegible] study [illegible]

[illegible]

[illegible] imagine [illegible]
[illegible] set a verification of his truth
[illegible] doctrine. Your distinctive
[illegible]
[illegible] non-professional women act ac-
[illegible]
[illegible]
it can never be developed
[illegible]
[illegible] a provincial [illegible]
[illegible] is well too that men skilled

in the science of medicine

He held then that the form of phthisis

and of the body, but were especially

in the lungs, is tubercular that

is last result from an

of the living tissue

He argued from the causes of

stances which operate on the di-
gestive function of Respiration —
[illegible] in a manner [illegible] the
[illegible]
[illegible] tion — and diseased nu-
trition in a majority of cases is
[illegible]
[illegible] — though it may arise
from breathing constantly vitiated
[illegible]
[illegible] & healthy exercise — from
[illegible] instances to which given
[illegible] generated excesses, prostra-
tion — and depressing emotions
tions is the disposition to Pulmo-

acquired. Disease of a-
and especially during
food when
- idy
yet it is two frequently [illegible]
[illegible] pecuniary circumstances
[illegible]
[illegible] greater [illegible]
[illegible]
[illegible]
which under the [illegible] circumstances such
as [illegible]
[illegible]
[illegible]
and hereditary predisposed

[illegible] other cause is catarrh. That a sudden cold may generate Phthisis a fact illustrations of which [illegible] [illegible] - To see stand [illegible] [illegible] should [illegible] [illegible] careful care - Excessive sexual exertion is another exciting cause. Besides these causes there are [illegible] those which act locally [illegible] bodies which lead to phthisis [illegible]

[illegible]

[illegible] this influence

[illegible] & thus lead to a [illegible]

[illegible]

[illegible] energy & [illegible] - time or power

[illegible] the temperature [illegible]

[illegible]

[illegible] sound &c - It is not the pressure

[illegible]

[illegible] vibrate in unison, but

[illegible]

[illegible]

[illegible] is with Cancer

[illegible]

Certain [illegible] phthisis than others owing to the [illegible] such are

[illegible]

[illegible] is lighted up & phthisis is [illegible] the exciting cause. Tubercles when there exists a predisposition is the cause of Cancer

[illegible]

[illegible] causes conducive to the
[illegible] which has occasioned
[illegible] Fructus the
[illegible] to the formation of tubercles i
[illegible]

[illegible] bring about this state of
[illegible] will
[illegible] Prof
[illegible] teaches that it is the
[illegible] pancreatic juice to
[illegible] – and if the matrix
[illegible] causes water
[illegible] entering [illegible]

Thus tobacco

fence.

whether the cattle

whether the disease is

a marked symptom.

caused partly by diminished respi-

surface. partly by accu-

Face caused by respiration

and circu

that dyspnoea, and

ency of respiratio

noticed although sum

be destroyed i

that a

requires but a sma

health, loss of muscular strength

appetite

water

and give rise to sour

[illegible]

[illegible] proceed to [illegible]

[illegible] portance in e[illegible]

[illegible]

[illegible] appeared coincident with the

[illegible] & dyspnoea, but yet before

[illegible]

[illegible] probable we have to do with

[illegible] mimic processes, in the

[illegible]

[illegible] secretory excretory [illegible]

[illegible]

[illegible] course or

[illegible] to the most important symptom

[illegible] vascular pulsations, or of the

[illegible] cation by convulsions of a pulmo-

[illegible]

[illegible]

[illegible] stage of the disease we are

to suspect circulatory [illegible]

The condition of the circulation as

[illegible]

[illegible] habitually [illegible]

[illegible]

of the constant symptoms of
[illegible]loss & the temperature as shown
[illegible]
[illegible]
progressive. It has also been shown
[illegible]
[illegible]
accompanied by considerable increase in
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
are daily febrile exacerbations. The
temperature in the morning is a
[illegible] normal. [illegible]

[illegible]

[illegible] followed by heat & perspiration

[illegible] for intermittent fever. In cases

[illegible]

gradual fall is more serious than a rapid & irregular diminution — A steady loss shows [illegible]

The principal source of this loss of weight [illegible]

increase in weight even in a fever of short duration, is the most convincing [illegible]

that the increase of temperature is due to an increased combustion of the tissues.

[illegible] other time [illegible]
[illegible] remark at the [illegible]
[illegible] may be [illegible]
[illegible] surface [illegible]
[illegible] surface [illegible]
[illegible]
[illegible]
[illegible] recto-vesicula in [illegible] is one of the
[illegible] the finger nails become incurvated
[illegible]
[illegible] the [illegible]
[illegible] so remote from the centre of
[illegible] relation, in consequence of much

[illegible] tuberculous matter is de-
[illegible]. In conclusion the pathological
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] of a certain diagnosis but as
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] defer giving further signs
[illegible] [illegible] [illegible] [illegible] [illegible]
treatment, the prognosis intestinal
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
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[illegible] [illegible] [illegible] [illegible] [illegible]
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[illegible] after phthisis already [illegible] may be secured [illegible] efficiency of any one of them [illegible]

[illegible] principal part = both a[illegible]ation - The patient [illegible] supplied with rich and [illegible] diet - which should be a[illegible] time to time that the mean[illegible] become disgusted with a[illegible] milk & cod-liver oil act esp[illegible] [illegible] [illegible] introduce [illegible]

[illegible] as a salutary [illegible]
[illegible] covered disagreeable flavor of the oil
[illegible] cinchona [illegible]
[illegible] or [illegible]
[illegible] essence of peppermint
[illegible] perceptible in
[illegible] the cold infusion of
[illegible] - This [illegible]
[illegible] quinchinum - for
[illegible] [illegible] - [illegible]
hand although [illegible]
[illegible] should be taken about an hour after
eating. The [illegible] of [illegible]
[illegible] absorbed
after [illegible] [illegible] will act
[illegible]. Form tried - D. from table -

[illegible] the daily allow-
[illegible] it is taken without great
[illegible] perseverance. if it does not impair
the appetite [illegible]
derangement of the bowels. it may
be [illegible] [illegible]
[illegible] for a long time. But the
important number of the alimentary
[illegible]
class we place Ex-Do it be used
[illegible] Alcoholic Stimulants do
[illegible] the influence
[illegible]
the circumstance which denote
[illegible]

[illegible]

[illegible] to exercise, if they do not excite
[illegible] the circulation and nervous
[illegible]
[illegible] in just the [illegible]
[illegible] will be production
[illegible] is portable will do [illegible]
effective it must be used in large
quantities [illegible]
[illegible] a moral question arises [illegible]
[illegible] will not discuss at present
[illegible] article of diet recently brought
[illegible]

[illegible]

[illegible] Salivation. The oils are [illegible]

[illegible] the pancreatic juice being [illegible] neutralized by the gastro-intestinal [illegible]. With reference to the influence [illegible] the time

much has been written. Advocates pro [illegible] the frigid & torrid zones are to be found among the votaries of medical science. [illegible]

[illegible] to a warm climate in time [illegible]

not vessels. [illegible]

[illegible] warm as [illegible]

[illegible] first

[illegible] it was this difference between [illegible] & a resident — the former remains [illegible]

[illegible] cattle is then doing the [illegible] and exhausting heats; a [illegible] Summer — During the winter [illegible] in a northern latitude. a [illegible] would do as well [illegible]

it devolves upon the medical attend-
ant after giving this advice - to see
[illegible] this be done
[illegible]
shall not remain
case of a rational opinion [illegible]
[illegible]
[illegible] be
[illegible]
It has been known sometimes
[illegible] the natives of Peru
that the removal of patients, even in
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible] suspension of the disease

— fact which is quite corroborated by the practice of physicians in Eng-
-ut time. Statistics of China show that
— per cent of all the patients sent
— were cured — The curability of Can-
-cer is becoming every day more generally recognized
by the profession [illegible]
[illegible]
[illegible]
[illegible]
[illegible] the [illegible]
of Nature, or success of art. can be looked for,
[illegible]
[illegible] from the disease cannot carry out. — — — — —

AN

Inaugural Dissertation

ON

The Circulation of the Blood.

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

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By

Wm. J. Lumsden.

Of

North Carolina.

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Circulation of the blood.

The discovery of the circulation of the blood is not due to one man alone, but the greatest honor rests on Harvey, who discovered the circulation of the blood in 1616, taught it in his public lectures in 1618, and in 1628 published the "Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus"; from this discovery dates the epoch of modern physiology, when tradition began to give place to observation. When we reflect that all the processes of life take place through the medium of the blood; that all tissues are nourished by it, and all fluids formed from it; that it gives

fresh material to every part, and takes away that which is worn out; that it carries oxygen to every part of the system, and gives to each structure its vital properties; we can form some idea of the state of physiology before anything was known of the circulation. This momentous discovery, from the isolated facts bearing upon it which were observed by numerous anatomists, to its grand culmination with Harvey, so fully illustrates the gradual development of most physiological truths, that it does not seem out of place to begin our study of the circulation with a rapid sketch of its history.

Before the time of Harvey, facts bear-

ing upon the circulation were chiefly of an anatomical character. Hippocrates discovered two kinds of vessels, arteries and veins; but he regarded the former as air bearing tubes, as their name implies. Galen demonstrated the error of this view. He showed that blood issued from divided arteries, and that it was contained between two ligatures applied to one of these vessels, in the living animal. His idea, however, of the mode of communication between the arteries and veins were entirely erroneous, believing as he did, in the existance of numerous small orifices between the ventricles. In 1553 Michael Servetus, discovered the pulmonary circulation, which was incidental

to the development of a theory with regard to the formation of the soul, and the development of what were called animal and vital spirits. The same year, by order of Calvin, Servetus was burned alive at Geneva. A few years later, Columbo, professor of anatomy at Padua, and Cesalpinus, of Pisa, also described the circulation of the blood through the lungs. To Cesalpinus is attributed the first use of the expression, circulation of the blood. These ideas, the importance of which is evident now that we understand the circulation, passed into oblivion and were not known to investigators during the succeeding century, and were only brought to light after the discoveries of Harvey had become

widely disseminated. A great discovery, preparatory to that of the circulation was made by Fabricius ab Aquapendente, professor at Padua, who, in the words of Flourens, "had a double glory". He discovered the valves of the veins, and he was the master of Harvey. Valves had been described by Etienne in the portal vein, and by Canarius in the azygos vein, and Eustachi had discovered the valves which bears his name and the valves of the coronary veins; but to Fabricius is generally ascribed the honor of the discovery of the valvular system in the veins. This was demonstrated to Harvey at Padua, though Fabricius does not appear to have had any definite idea of their function. It is possible that this anatomical

fact may have directed the mind of Harvey in his first speculations on the circulation. Early in 1602, he advanced beyond the study of inanimate parts by dissection, and investigated animated nature by means of vivisections. When we consider the state of science at that time, it is evident, that anatomists had long been preparing the way for the discovery of the circulation, though they knew little of the functions of the parts they described. The formation of the heart and vessels, and even the arrangement of the valves of the veins, did not lead them to suspect the course of the blood; but a few well conceived experiments on living animals have made it so plain, that we now wonder it remained unknown so long. Furthermore these experi-

ments made it evident that there was a communication at the periphery between the arteries and the veins. In the work of Harvey are described, first, the movements of the heart, which he exposed in living animals. He described minutely all the phenomena which accompany its actions, its diastole, when it is filled with blood, and its systole. Harvey completed his description of the circulation, by experiments showing the course of the blood in the arteries and veins, and the use of the valves of the veins. These experiments are models of simplicity and pertinence.

Thus Harvey described so perfectly the course of the blood, and left not a shadow of doubt as to the communication between the arteries and veins, it was left to

others to actually see the blood in movement and follow it from one system of vessels to the other. In 1661 Malpighi saw the blood circulating in the vessels of the lung of a living frog, in examining it with magnifying glasses; and later Leewenhock saw the circulation in the wing of the bat. The great discovery was then completed. Enough has been said in the previous historical sketch to give a general idea of the course of the great nutritive fluid, and the natural anatomical and physiological divisions of the circulatory system. There is a constant flow from the central organs to all the tissues & organs of the body, and a constant return of the blood after it has passed through these parts.

But before the blood, which has thus been brought back, is fit to return again to the system, it must, pass through the lungs & undergo the changes which constitute the process of Respiration. In man & all warm blooded animals, the organism demands blood that has been fully purified & oxygenated by its passage through the lungs, & here we find the first great & complete division of the circulation into the pulmonary & systemic, or, as they have been called, the lesser & greater circulation. The heart is double; having a right & left side which are entirely distinct from each other. The right heart receives the blood as it is brought from the system by the veins, & sends it to the lungs; the left heart receives the blood from the lungs & sends it to the

system. Though the two sides of the heart are distinct from each other, their action is simultaneous, & in studying this organ we will find that the blood is sent simultaneously from the right side to the lungs & from the left side to the system.

For convenience of study the circulatory system may be divided into heart & vessel, the latter being of three kinds, the arteries, which convey blood to system from heart, the capillaries, which distribute the blood more or less abundantly in different parts of the system; and the veins, which returns the blood from system to the heart.

The function of each of these divisions may be studied seperately.

Action and Physiological anatomy

of the Heart. The human heart is a pear shaped muscular organ, situated in the thoracic cavity, with its base about the median line, & its apex at the fifth intercostal space, one inch to the inner side, & two inches below the left nipple. Its weight is from 8 to 10 ounces in the female, & from 10 to 12 ounces in the male. It has four distinct cavities: a right & left auricle, & a right & left ventricle. Of these, the ventricles are the more capacious. The heart is attached by the great vessels, to the posterior wall of the thorax, while the apex is free & capable of a certain degree of motion. The whole organ is enveloped in a fibrous sac called the pericardium, lined by a serous mem-

brane, which is attached to the great vessels at the base & reflected over its surface. This sac is lubricated by a drachm or two of fluid to prevent friction. The cavities of the heart are lined by a smooth membrane, called the endocardium. The right auricle receives blood from the venae Cavae & empties it into right ventricle. The auricle presents a principle cavity or sinus, as it is called, with a little appendix, called, from its resemblance to the ear of a dog, the auricular appendix. It has two large openings for the vena cava ascendens & the vena cava decendens, with a small opening for the coronary vein, which brings the blood from the substance of the heart itself.

It has, also, another large opening, called, the auriculo-ventricular opening, through which the blood flows into the right ventricle. The walls of this cavity are quite thin compared with the walls of the ventricles, measuring about one line in thickness. They are composed of muscular fibres which are arranged in two layers, one of which, the external, is common to both auricles, and the other the internal, is proper to each. These muscular fibres, though involuntary in their action, belong to the striped, or what is termed voluntary, variety, and are similar in structure to the fibres of the ventricles. One or two valvular folds are found at the orifice of the coronary veins, preventing a reflux of blood; but there are no valves at the

orifices of the venae cavae. The left auricle receives the blood which comes from the lungs by the pulmonary veins. It does not differ materially in its anatomy from the right. It is a little smaller, & its walls are thicker, measuring about one line & a half. It has four openings, by which it receives the blood from the pulmonary veins. These openings are not provided with valves. And has a large opening through which the blood flows into the left ventricle. The arrangement of the muscular fibres are the same as in the right auricle.

The ventricles, constitute the bulk of the heart. They have a capacity larger than that of the auricles, and are provided with thick muscular walls. The capacity of

the right auricle & ventricle exceeds the corresponding auricle & ventricle of the left side by from 1/10 to 1/3. The absolute capacity of the ventricles is from 4.8 to 7 ounces. The inner surface of both ventricles is marked by peculiar ridges & papillae, which are called columnae carnae. Three varieties of these, first, fleshy ridges projecting into the cavity, second, columns attached by each extremity & free in the middle, last variety, those giving origin to the chordae tendinae, which are attached to the free edges of the auriculo-ventricular valves. These fleshy columns interlace in every direction & evidently facilitate the complete emptying of the ventricles during their contraction. The walls of the left ventricle are uniformly thicker than those of the right.

The average thickness of the right ventricle at its base is stated to be 2½ lines, and the thickness of left ventricle at corresponding part is 7 lines. The arrangement of the muscular fibres forming the ventricles ~~die~~ more regular than in the auricles. Like auricles they have two layers. Superficial layer common to both, & deep proper to each. The muscular tissue of the heart is of a deep red color, & resembles the tissue of ordinary voluntary muscles; but it presents certain peculiarities in its minute anatomy. The fibres are shorter & more granular, & are connected to each other by short inosculating branches, & the fibres have no sarcolemma. Each ventricle has two orifices: One

by which it receives blood from auricle, & the other by which blood passes from right side to lungs & from left side to system. All of these openings are provided with valves which are so arranged as to allow the blood to pass in but one direction. The Tri-cuspid valve is situated at the right auriculo-ventricular opening. It has three curtains, the free borders are attached to the chordae tendinae. When the organ is empty, these curtains are applied to the walls of the ventricle leaving the opening free; but when the ventricle is full, & the fibres contract, they are forced up & the opening is closed.

The Pulmonary valves are called Semilunar or Sigmoid valves of the right side, & are

situated at the orifice of the pulmonary artery. They are strong membranous pouches, with their convexities, when closed, looking towards the ventricle. In the centre of each valve is a little corpuscle called the corpuscle of Arantius; & just above these points of attachment, the arteries presents three little dilatations, or sinuses, called the sinuses of Valsalva. The corpuscles of Arantius aid in the adaptation of the valves to each other, & the effectual closure of the orifice.

The Mitral Valve, called the bicuspid, is situated at the left auriculo-ventricular orifice. It is called Mitral from its fancied resemblance to a bishop's Mitre. It is attached to the edges of the opening, & its free borders

are held in place when closed by the Chordae Tendinae of the left side. It presents no material difference from the Tricuspid valve, except it is divided into Two curtains instead of three.

Aortic Valves, also called semilunar valves of the left side, and are situated at the aortic orifice, they present no material difference from the valves of the pulmonary artery. These valves are very strong & can hardly be ruptured by a force which is not sufficient to rupture the vessels themselves. In studying the phenomena which accompany the action of the heart, we shall follow the course of the blood, beginning with it as it flows from the vessels into the auricles. The dilatation

of the cavities of the heart is called the diastole, & their contraction the systole. The auricles are continually receiving blood, except during the short time of their contraction, on the right side from the venae cavae & on the left from the pulmonary veins. The blood continues to flow in until the cavities of the auricles are completely filled, & during the repose of the heart, the blood flows through the patent auriculo-ventricular orifice into the ventricles. When the auricle becomes filled it contracts quickly & with considerable force, driving the blood into the ventricles effecting the complete diastole of these cavities. During the auricular systole the muscular fibres around the orifices of the venae cavae con-

strict them & in some measure tends to diminish the reflux of blood. Some regurgitation takes place into the veins at each auricular systole, but this prevents overdistention of the ventricles. Immediately following, the contraction of the auricles, which produces complete distention of the ventricles. From the great thickness of the walls of the ventricles, their contraction is much more powerful than that of the auricles. By their action the blood is forced from the right side to the lungs by the pulmonary artery & to the system from the left side by the aorta. Regurgitation into the auricles is effectually prevented by the closure of the tricuspid & mitral valves, after this the heart has a period of

repose. the blood continues to flow into the auricles & from them into the ventricles, until the auricles again become filled, & another contraction takes place. During the repose of the heart, its position is with its base directed slightly to the right, & its apex to the left side of the body; but with each ventricular systole, it raises itself up, the apex is sent forward, & moved a little from left to right. The movement from left to right is a necessary consequence of the course of the superficial fibers. The fibres on the anterior of the organ are longer than those on the posterior surface, & pass from the base which is comparatively fixed, to the apex, which is movable. From this anatom-

ical arrangement the heart is moved upwards & forwards. The locomotion of the heart takes place in the direction of its axis, & is due to the sudden distention of the great vessels at its base. These vessels being elastic become enlarged in every direction, when they receive the charge of blood from the ventricles, & project the entire organ against the chest. This movement is aided by the recoil of the ventricles when they discharge their contents. From the spiral course of the superficial fibres, the heart has a certain twisting from left to right, with each systole & untwisting with the diastole, and like any other muscle becomes hardened with the systole. The changes in the length of the heart during its systole has always been

a matter of discussion among physiologists & is to this day sub judice. That it is lengthened has many & able supporters, that it is shortened has as many & no less able, all seem to agree that it seems ~~shortened~~ elongated while in position in the body, but the recent experiments of Chauveau & Faivre, & also by Prof. Austin Flint, Jr. show clearly that it seems elongated because it has no firm attachment, & that if taken out of the body & made stationary it is evidently shortened during the systole. Each movement of the heart produces an impulse, which can be felt & sometimes seen, in the fifth intercostal space, a little to the left of the median line. This is synchronous with the contraction of the ventricles, & is due to the locomotion.

of the ventricles. As to the force of the heart at each contraction, opinions are widely divergent. Hales estimates the force of the left ventricle to be 51½ lbs. And the comparative force of the right & left ventricles is as 1 to 3. The force of auricles as compared to ventricles is as 1 to 10.

The auriculo-ventricular valves are very strong. But there is a certain amount of insufficiency at the right auriculo-ventricular orifice, which does not exist on the oposite side, and has been called the "Safety valve principle of the right ventricle". The advantage of this insufficiency is apparent. The right ventricle sends its blood to the lungs, where the walls of the capillaries are very thin. The

lungs themselves are exceedingly delicate, & an effusion of blood might be followed by serious consequences. To prevent this, the right ventricle is not allowed to exert all its force upon the blood going into the pulmonary artery; but when the action of the heart is exagerated from any cause, the lungs are relieved by a slight regurgitation, which takes place through the Tricuspid valve.

The lungs are still further protected by the sufficiency of the Mitral valve, which provides that no regurgitation shall take place into their substance from the left side.

Aortic and Pulmonary Valves:

The action of these valves is nearly the same on both sides. In the intervals of the ventricular contraction, they are closed, & prevent

regurgitation of blood into the ventricles. There is at the pulmonary valve also a safety valve principle as important as that of the tricuspid. The corpuscles of Arantius situated in the middle of each valvulae curtain assists in the accurate closure of the orifice. The Sinuses of Valsalva, situated in the artery behind the valves, are regarded as facilitating the closure of the valves by allowing the blood to pass easily behind them.

The action of the heart is accompanied by certain sounds, these sounds two in number, have been called first & second sound with reference to the systole. The first sound is synchronous with the apex beat. The second sound follows the first without any appreciable interval. Between

the second & first sound there is an interval of silence. The rhythm of the sounds bears a certain relation to the rhythm of the heart's action. The first sound is relatively dull, low in pitch, and complex, and is produced by the sudden closure of the auriculo-ventricular valves, the muscular sound due to the muscular contraction of the heart, & the impulsive sound, due to the shock of the organ against the walls of the thorax. It occupies the period of the ventricular systole, or four tenths of the heart's action. The second sound is relatively sharp, high in pitch, and has but one clear element, which is due to the sudden closure of the semilunar valves at the orifices of the aorta & pulmonary arteries, & occupies three tenths

of the period of the hearts action. The pause occupies three tenths also. The number of pulsations of the heart is not far from seventy per minute in an adult male, & from six to ten beats more in the female. There are individual cases where the pulse is normally much slower or more frequent than this. In both male and female there is great difference in the rapidity at different periods of life, it is accelerated at puberty & in old age. Digestion increases the hearts action, from five to ten beats per minute after each meal, fasting diminishes its action. It is modified by posture & muscular exertion, in the male there is a difference of ten beats between standing & sitting pos-

ture & fifteen between standing & recumbent posture. Exercise increases the heart's action. The influence of temperature is marked, being faster in warm climates. The relations between the functions of Respiration & Circulation are minute. One function cannot go on without the other. Blood not aerated cannot circulate through the capillaries, & for this reason, when respiration ceases, the heart becomes distended, & its muscular fibres paralyzed. The cause of the rhythmical contraction of the heart is not perfectly understood, but the condition is known, it probably possesses inherent irritability, & the circulation of blood through its cavities is necessary, in reality is the natural stimulus of the organ, & may be

said to be the cause of its regular contractions, though it does not endow the fibres with their contractile properties. The movements of the heart are not directly under the controls of the will; & is devoid of general sensibility. Its physiological movements, however, are capable of being influenced in a remarkable degree through the nervous system, notwithstanding this insensibility. The anatomical connections of the heart with the nervous centres are mainly through the sympathetic & the pneumogastric nerve. They perform the function of regulating the force & frequency of the hearts pulsations. We have now finished the physiological action of the heart in the circulation of the blood. We have seen that the blood is

forced into the pulmonary artery from the right side of the heart & into the aorta from the left side. We have seen how the valves guarding the orifices of these vessels prevent regurgitation during the intervals of contraction. There is, therefore but one direction in which the blood can flow in obedience to this force.

We will next consider the arteries. They are not merely inert tubes, but are endowed with elasticity, by which the circulation is facilitated, & with contractility, by which the supply to any part may be modified, independently of the action of the heart. The arrangement of the arteries is such that the requisite supply of blood is sent to all parts of the economy by the

shortest course, & with the least expenditure of force. The arteries are divided into three classes, viz. largest, medium, & smallest. They have three coats, the first or external is composed of white inelastic fibrous tissue & is the only one that is vascular. The middle coat is composed chiefly of yellow elastic tissue. The inner coat is a thin homogeneous membrane identical in structure with the endocardium & is continued throughout the entire vascular system. In the smallest arteries the [illegible] coat is thin, & disappears just before the vessels empty into the capillary system; so that the very smallest arterioles have only the inner coat, & a layer of muscular fibres. The plexus of vessels found in the external

coat is called vasa vasorum, & come from the adjacent arterioles. Nervous filiments chiefly from the sympathetic system, accompany the arteries. At every pulsation of the heart, all the blood in the ventricles, except perhaps a very small quantity is forced into the arteries, & they force it on by their elasticity. The smaller vessels being endowed with contractile power, regulate the distribution of blood. The contraction of the heart causes some locomotion of the arteries, this with the passage of blood through the vessels is called the pulse, which may be felt in any artery that is exposed. The reaction of the elastic walls of the arteries during the intervals of the hearts action gives rise to a certain

amount of constant pressure, called arterial pressure, by which the blood is constantly forced toward the capillaries. This has been estimated to be equal to six feet of water or six inches of Mercury. But this force is not the same in all parts of the body, it is greatest near the heart. It is favored by any thing which favors the flow of the blood into the great vessels, as the expiratory act, or by any thing which obstructs the flow from the arterioles into the capillaries, as muscular effort, contraction of the muscular coat of the smallest arteries, or non aeration of the blood. It is diminished by diminishing the quantity of blood, or by any thing which facilitates the passage of blood through the capillaries. The blood passes through the arteries at the rate of from 10 to 13 inches per

second, there is some slight variations in different parts of the arterial tree.

Circulation in the Capillaries: The capillaries should be regarded as commencing at the point where the blood is brought near enough to the tissues, to enable them to seperate the elements necessary for their regeneration, & give up the products of their physiological decay. With our present knowledge, it is impossible to assign any limit where the vessels cease to be simple carriers of blood; & it does not seem probable that it will ever be known to what part of the vascular system the processes of nutrition are exclusively confined. What seems the most physiological view, is that the capillaries are the vessels which have but a single homogeneous tunic;

for in these the blood is brought in closest proximity to the tissues.

The true capillaries have but a single amorphous coat, from $\frac{1}{25000}$ to $\frac{1}{12500}$ of an inch in thickness, the continuation of the lining membrane of the large vessels; their diameter is generally as small or smaller than that of the blood corpuscles; so that these bodies always pass in a single line, & must become deformed in passing through the smallest vessels; recovering their shape, however, when they pass into vessels of larger size. The capillaries are smallest in the nervous & muscular tissue, retina & Peyer's patches, where they have a diameter of $\frac{1}{8000}$ to $\frac{1}{4000}$ of an inch. In the mucous layer of the skin, & in the mucous membrane, they

are from $\frac{1}{4000}$ to $\frac{1}{2400}$ of an inch in diameter. They are largest in glands & bones, where they are from $\frac{1}{3000}$ to $\frac{1}{2000}$ of an inch in diameter. Taking out the thickness of the walls, it is evident that it is only the very largest of them that will admit of the passage of a blood disk without a change in its form. Blood disk being $\frac{1}{3500}$ of an inch in diameter. The capillaries form a true plexus of vessels of nearly uniform diameter, branching & inosculating in every direction, distributing blood to the parts, as their physiological necessities demand. These vessels have every where the same general characteristics, the most prominent of which are uniform diameter & absence of any positive direction. The capillary network is very rich in the substance of glands & organs of ab-

sorption: but the vessels are only distended with blood during the physiological activity of the parts. The supply is very abundant in the muscles & nerves when nutrition is very active. In none of the tissues do we find capillaries penetrating the anatomical elements, as the ultimate muscular or nervous fibres. Such tissues as cartilage, hair, nails, &c receive no red blood, because they contain no vessels capable of conveying red blood, but are nourished by imbibing the nutritive plasma. The capacity of the capillary system is immense. It is only necessary to consider the prodigious vascularity of the skin, mucous membrane, or muscular system, to realize this fact. It has been estimated to be from 500 to 800 times more than that of the arte-

rial system, but this is supposition. The circulation in the true capillaries is sui generis. Here the blood is distributed in every direction, in vessels of nearly uniform diameter. The vessels are generally so small as to admit but a single row of corpuscles, which move almost like beings endowed with volition. In a single vessel, a line of corpuscles may be seen moving in one direction at one moment, & a few moments after a directly opposite course. The corpuscles occupy the central part of the vessels, & a layer of plasma next to the walls. The capillary circulation is subject to so many differences that it is impossible to give any deffinite rate of its circulation. various estimates have been made, it is generally agreed to be about from

$\frac{1}{2}$ to 1 inch per minute. Many theories have been put forth as to the cause of the capillary circulation. It is now a pretty firmly established fact that the action of the heart is the prime cause, & the arterial pressure, which is itself derived from the action of the heart, is competent to produce the circulation of the blood, with all its variations, in the capillary vessels. With moderate limits, cold locally applied diminishes the quantity of blood sent to the capillaries, while heat increases it. Irritants cause first contraction & then dilatation of the capillaries.

Veins: The blood distributed to the capillaries of all the tissues & organs by the arteries, is collected from these parts in the veins & carried back to the heart. The ve-

vous system may be considered, in general terms, as divided into two sets of vessels; one which is deep, & situated in proximity to the arteries; and the other, which is superficial, and receives for the most part the blood from the cutaneous surface. The entire capacity of these vessels is very great, as compared with the arteries, & is estimated to be as 4 to 1. The veins anastomose freely with each other, & the communication is such that the blood can always find a way to the heart, and once fairly out of the capillaries, it cannot react & influence the circulation of fresh blood in the tissues. Collected in this way from all parts of the body, the blood is returned to the right auricle, from the head and upper extremities

by the superior vena cava, from the trunk & lower extremities, by the inferior vena cava & from the substance of the heart, by the coronary veins.

Structure and Properties of the veins.

The structure of the veins is somewhat more complex than the arteries. The walls are thinner, and are divided into three distinct coats. The Internal coat is a continuation of the single coat of the capillaries & the internal coat of the arteries, somewhat thinner than in the arteries, lined by a delicate layer of epithelium.

The Middle Coat is divided by some into two layers, an internal layer of longitudinal fibres; and an external layer, in which the fibres have a concentric direction. The

internal layer contains a large number of capillary vessels called vasa vasorum. The External coat is composed simply of white fibrous tissue, In the largest veins there is a layer of longitudinal muscular fibres, this coat is several times thicker than the internal. In the venous sinuses and veins which pass through bony tissue, only the internal coat & a few longitudinal fibres are found, and the whole closely attached to the surrounding parts. When a vein is cut across its walls fall together, if not supported by adhesions to surrounding parts. Though with much thinner and apparently much weaker walls, the veins, as a rule, will resist a greater pressure than the arteries. The inferior vena cava of the sheep will

require a pressure of 178 pounds to rupture it, while the aorta will rupture under 158 pounds. The veins possess a considerable degree of elasticity, and it has also been found that they have a peculiar contractility. In all parts of the venous system, except in the abdominal thoracic & cerebral cavities, there exists little membranous semilunar folds, the valves of the veins, resembling the aortic and pulmonic valves of the heart. When distended the convexities look towards the periphery, generally found in pairs, but occasionally in groups of three. They are formed of the delicate lining membrane of the veins, with the longitudinal layer of the middle coat. They are generally situated just below the point where a small vein empties into one of larger

size, so that the blood, as it passes in, finds an immediate obstacle to its passage in the wrong direction. It is evident that the great function of the valves is in presenting an obstacle to the reflux of blood toward the capillary system, and they are always brought into action when any thing produces a tendency in the blood to recede. As a rule, in the normal circulation, the flow of in the veins is continuous; but it may under certain conditions become intermittent. The pressure in the veins is much less than in the arteries, as a rule it is in inverse ratio to the arterial pressure. It is impossible to fix upon any definite rate as representing the rapidity of the current

of blood in the veins. The main cause of of the venous circulation is the force of the left ventricle or the vis a tergo produced by it, but there are other forces which concur to produce movement of the blood in the veins, viz, muscular action, A suction force exerted by the action of the thorax in respiration, Possibly an influence of the contraction of the coats of the vessels themselves, and a force of gravity which operates only on vessels carrying blood from above downwards, The circulation of the blood is peculiar in different parts of the body. The whole round of the circulation is estimated to take place in about 2 3 seconds—

AN

Inaugural Dissertation

ON

Acute Rheumatism

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

John B. Pennington

Of

Maryland

Session of 1869

Acute Pleurisy.

Acute Pleurisy is inflammation of the pleura.— a serous membrane which lines the cavity of the chest and is reflected upon each lung. It is divided into two layers.— the visceral and the parietal. The free surfaces of these two layers are smooth, polished,— and, moistened with a serous fluid.— The pleural is supplied with blood vessels, from the intercostal, internal-mammary, and other small arteries in the surrounding parts.

The nerves are derived from the Phrenic and Sympathetic. The offices of the Pleura are to afford support, and allow movement without injury from friction.

Pathological Character.

It is supposed that for a brief period after the commencement of inflammation of the Pleura, the membrane is abnormally dry, from suppression of the serous fluid which moistens it in health. But soon blood plasma begins to exude, and in a short time, the cavity of the chest may be filled with liquid. If death should occur at this stage of the disease, we would find the

chest to contain more or less liquid the amount varying in different cases.

In the upper part of the chest, the liquid will be clear. in the lower it will be turbid, - from admixture of coagulated fibrin and lymph.

After death occurring at a later period, the anatomical characters are different. The chest may or may not contain liquid. The lymph will be found to have assumed the form of a false membrane, with which the pleural surfaces may be more or less coated, and if the free surfaces of the pleura be not separated by liquid, they may be found agglutinated by means of intervening lymph.

The liquid in the chest occupies space at the expense of the lung which is above the liquid, and more or less compressed according to the quantity of liquid present. If the disease progress favorably, the liquid diminishes with variable rapidity in different cases, by absorption. After the removal of all the liquid the absorption of the lymph requires some time. In the mean time the pleural surfaces coming in contact may be agglutinated and thus obliterate more or less of the pleural cavity.

The inflammation in acute pleurisy, occurring as a primary disease is general;- that is, it extends over

the entire serous membrane.

Occurring as a secondary affection to pneumonia or pulmonary tuberculosis the inflammation is limited to a portion of the membrane. In these cases there is no liquid effusion, and the disease is then called "dry pleurisy". —

Pleurisy occurring as a primary affection is seated oftener in the left than in the right side.

Clinical History

In studying the clinical history of pleurisy it is thought best for convenience' sake, to divide the disease into three stages and consider the first as extending from the attack to the time when an appreciable amount

of liquid has been effused. This stage is usually short; it lasts in some cases only a few hours, and rarely longer than twenty-four.

The second stage may be considered as extending to the time when the liquid begins appreciably to diminish. The length of this stage, varies in different cases. Sometimes the liquid is effused rapidly, and absorption begins at once; in other cases, when the maximum quantity of liquid is reached, absorption does not commence for several days.

The third stage is the time occupied in the absorption of the liquid. The length of this stage

varies greatly in different cases. The duration of the career of Beule's fever, is from two to three weeks. - The invasion is sudden, and often without premonition. - In some cases there is pain in the affected side, two or three days preceding the development of inflammation. The attack is usually ushered in by a chill, followed by fever, and acute pain in the side. The pain is sharp and lancinating in character, felt especially in inspiration, and in consequence of this pain, the inspiratory act is instinctively arrested.

The movement of the chest, is impaired on the affected side. The

...ments of the body are painful. There is fever, the frequency and force of the pulse are increased. Cough with slight expectoration. – The expectoration consists simply of mucus. The respirations are feeble in character, but increased in frequency. – The increase in frequency is to compensate for imperfect inspiration.

The patient at this stage prefers to lie on the healthy side. These are the symptoms of the first stage of the disease, and ... continue in the second stage – for a short time. But after a certain amount of liquid effusion, they are materially modified. – The pain is lessened, or

it may cease entirely. Coughing becomes less painful. The fever diminishes; other evidences of constitutional disturbance are less marked. The respirations are still feeble, and frequent, which is now due to compression of the lung by liquid. — The patient now prefers to lie on the affected side. — that he can more fully dilate the opposite lung. In the third stage, or stage of absorption, pain is either wanting, or produced only by coughing, or muscular efforts. There is no fever. The respirations become less frequent. The appetite returns; food is digested without difficulty; and the normal,

condition of all the functions of the body is gradually restored.

Pathological Character.

Acute Pleurisy is inflammation of a serous membrane, - the Pleura. Inflammation is perverted nutrition occasioned by some agency. The sensible changes which occur in an inflamed part are incident to hyperæmia, - or a morbid accumulation of blood in the part. - Hence arise redness, heat, pain, and swelling, the four characters which have heretofore entered into the definition of inflammation. The part affected receives a larger amount of arterial blood than in health. There is also a retardation

of the circulation through the inflamed part. So far the condition is expressed by the term "congestion". — The effusion of liquid, the deposit of lymph, and formation of false membrane, (which follows the stage of active congestion) have been spoken of under the head of 'Anatomical Character'.

Causation. — Acute Pleurisy may be produced traumatically by contusions especially if accompanied by fracture of the ribs and by penetrating wounds. The disease is sometimes attributed to the action of cold. In a larger proportion of cases, the disease occurs from some unknown cause. It is developed occasionally in connection with acute

articular rheumatism. It occurs sufficiently often in persons affected with "Bright's disease of the kidneys" to show a pathological connection, and in these cases it is believed to be due to urea in the blood.

The liability to the disease is greater in youth and in middle age, than in infancy, and old age. It occurs oftener in males than in females.

Diagnosis.—

Pleurisy begins with a chill, followed by fever, and a dry irritating cough. The most distinctive symptom of the first stage, is the sharp acute pain, the "stitch in the side".—But the physical signs are the most important

elements in the diagnosis of the disease. In the first stage, they are, — impaired movement of the chest, feeble respiration and a friction sound, of varying extent and intensity. If the disease be idiopathic pleurisy, — the signs belonging to the second stage, are present, without, much delay: — these signs are due to liquid effusion, — and are recognized by — percussion, — auscultation, — palpation, and inspection. On percussion, there is dulness at the base of the chest, extending upward in proportion to the quantity of liquid, — the patient being in the erect position. By changing the patient to the recumbent posture, if the pleural surfaces be not united

by old adhesions, the liquid will gravitate to the depending part of the sac, and causes a marked change in the relation of dulness, and the resonance, as previously determined in the erect posture. On auscultation, the respiratory murmur, is feeble, - as compared with the murmur in the opposite side. If the amount of liquid be large, the intercostal depressions may be diminished or destroyed at the inferior part of the chest. -

Differential diagnosis

Acute Pleurisy may be confounded with pneumonia, - pleurodynia, - intercostal neuralgia. - From Pneumonia, pleurisy is distinguished in the first stage by

the presence of the friction sound, and by the absence of the crepitant rale, - and by the character of the pain:- which, in pleurisy is sharp and lancinating while in pneumonia, the pain is dull. In pleurisy, the cough is dry;- In pneumonia, cough is followed by expectoration. In the second stage, pleurisy is distinguished from pneumonia, by the signs which denote the presence of liquid in the chest. They are, -- obliteration of the intercostal spaces,- dulness on percussion, - in the lower part of the chest if the patient be in the erect position. If the patient assume the recumbent posture there will be a change in the relation of dulness.

and resonance, as previously determined in the erect position. In pneumonia there is no change in the relation of dulness and resonance, with a change of position of the patient.

On auscultation in pleurisy the respiratory murmur is either suppressed, or feeble, below the level of the liquid; above it is feeble compared with the opposite side.

In pneumonia, the respiration is bronchial, with bronchophony.

In pleurisy the febrile symptoms are usually slight. In pneumonia, they are severe. Pleurisy in the first stage is not easily distinguished from pleurodynia, and intercostal neuralgia.

as in both of the diseases from which pleurisy is to be distinguished. The pain is similar to pain in pleurisy. It is on the friction sounds that we depend for a positive diagnosis. - But the second stage of effusion. - the discrimination is easy. - - - Prognosis - -

The prognosis in cases of acute pleurisy - not complicated with other diseases is almost always favorable. - It may prove fatal in consequence of a large amount of liquid effusion occurring very rapidly. - death taking place by Apnœa. -

Treatment. - - The objects of treatment in acute pleurisy - differ in the different stages of disease. In the first

stage, if the patient be robust and plethoric and suffering from severe pain, - and a sense of oppression with a strong, hard, full pulse, - abstraction of blood - affords relief, and it will contribute to a favor-able progress of the disease. -

But if the patient be feeble, - and anæmic, - with a pulse denoting ex-cited action, but not increased in force, - blood-letting should not be resorted to, - notwithstanding the local symptoms would be relieved. In cases of this kind, it is important to economize the powers of life; - by taking blood, we deprive the flesh of that which we are told, is its life. - The red corpuscles; - and these, during the progress of dis-

case, - are not easily - reproduced.

- Depletion may be obtained by the use of saline purgatives, and diaphoretic remedies - combined with restricted ingestion of food, and liquids. To diminish the frequency and force of the heart's action, we may use nauseant sedatives such as "tartar-emetic" - ipecacuanha, - and by direct sedatives such as digitalis - aconite; - and veratrum viride. - If the tartar-emetic be given, care should be taken not to carry its effects beyond the point - of slight nausea; - or if the direct sedatives are used - they should occasion no effect - beyond a reduction of the force & frequency of the heart's action.

Pain should be relieved by opium, in

some form, in doses sufficient to relieve pain — and place the system under an anodyne influence.

In the second stage of the disease, when considerable effusion of liquid has taken place —, when pain is no longer a prominent symptom, and the fever has abated, the remedies above mentioned, are no longer appropriate. The object in this stage is to promote absorption of the liquid: for this purpose, hydragogue purgatives, diuretics, and blisters are useful.

Of the hydrogogue purgatives, the bitartrate of potassa, or the sulphate of magnesia, are to be preferred. Diuretics may be given with advantage: — The squill, and digitalis may be combined, and given, or the

diuretic salts of potassa, may be given. The patient should not be allowed to drink more water, or fluids than is compatible with comfort. - Blisters may be used, with propriety at this stage - but if I could succeed in removing the liquid with other measures I should not use them.

In the third stage of the disease, measures to promote absorption are indicated, for awhile, but they should not be continued too long or they may do harm. - When the amount of liquid is considerably reduced the patient may be considered convalescent. -

During convalescence, the object is to re-establish the normal health of the patient. This is to be done by tonics, nutritious diet, and hygienic measures. The patient

should eat, solid, nutritious food, meat may be allowed, whenever taken with relish and digested. If the appetite is not good, - and digestion weak, remedies to improve both, are indicated.
Wine in small quantities taken with the meals, will be advantageous.
As soon as the patients can go out into the open air, gentle exercise, out of doors, is to be encouraged. - Pure air will do more towards improving the appetite, and restoring the digestive organs to their normal condition, than all the other remedies. -

AN

Inaugural Dissertation

ON

Pleurisy

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OF

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DOCTOR OF MEDICINE,

By

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Of

Frederick County Virginia

Session of 1868-9

Pleurisy or inflammation of the pleura is a common disease in this country, and therefore should have the careful study of her Physicians. Before describing the disease, I propose to say something about the pleura; what it is, and where situated. It is a delicate serous membrane, which invests the lung, one on either side, and is then reflected upon the inner surface of the thorax. The portion investing the lung is called the pleura pulmonalis; that which lines the thorax, the pleura costalis. The space between these two layers, the cavity of the pleura. Each

pleura is therefore a shut sac one occupying the right, the other the left half of the thorax and not having any communication with each other. The inflammation of such a membrane situated as it is, in so important a cavity as the thorax, produces serious and often fatal results. Pleurisy without pneumonia is much more common than pneumonia without pleurisy. The inflammation of this membrane is attended with all the events that take place from serous surfaces. That is, the pouring out of serum, of coagulable lymph.

of pus, or of blood. One of the most remarkable results of pleurisy is the pouring out of lymph into a shut sac, which has the effect of glueing the opposing surfaces to each other, or if in case of serum filling up the sac, to largely extend the cavity. False membranes are very often formed by the exuded lymph. When this is first thrown out it is soft, and of a greyish white color, and somewhat like paste. But it soon becomes organized, minute red streaks are at first seen, which are embryo blood-vessels that inosculate with those of the pleura, and it thus becomes a part of

the living frame. The extent of these false membranes is according to the inflammation which has produced them. Sometimes, lines the whole cavity, and then the lung is firmly fixed to the side of the thorax, or it may adhere in places making two or more cavities containing serum. The sound first heard at the beginning of this adhesive process is that of friction, caused by the moving up and down of the opposite surfaces of the pleura, now in contact. This sound does not last long from the fact that the surfaces soon adhere. Liquid effusions

are of great importance. The effects produced vary according to the quantity of fluid contained in the cavity. At first the lung is only compressed, but as the fluid increases it pushes the heart aside, and often encroaches upon the abdominal viscera. Very often the lung is completely flattened by the distended pleura, so much so, as to entirely exclude the air, or the opposing vesicles surfaces become adhered, in which case it is said to be carnified. What effect does these changes have upon the sounds heard within the healthy chest. If the lung is in

the condition last spoken of the respiratory murmur will not be heard at all, or if partially compressed it may be partially heard. When the air is excluded and the thorax distended we have a dull flat sound upon percussion. If a fluid exists in the pleural cavity and air in the lungs the percussion sounds vary according to the position of the patient. The fluid obeys the laws of gravitation, so that the part which gives a dull sound when the patient is sitting, will be clear when he is lying down. This will not hold good, provided adhesion has taken

place in different parts of the pleural surfaces, or the cavity may be completely filled with the fluid. In the latter case the whole surface will give a dull sound, which distinguishes it from pneumonia, from the fact that in the latter disease some part of the chest is almost always clear upon percussion. Symptoms. There are chills, pain in the chest, dyspnoea, cough, difficulty of assuming certain positions and fever. The pain is said to be one of the most striking signs of the disease. It occupies a certain spot, and the patient feels intense pain every time

the act of respiration goes beyond a certain limit. The situation of this pain varies. It is commonly felt just below one of the breasts in the part corresponding to the lateral attachments of the diaphragm. It is occasionally felt in the axilla, the shoulder, or beneath the clavicle. Wherever the pain is situated, respiration is apt to increase it, also by coughing or moving of the body. The pain occasionally is very slight, it is then produced by a deep inspiration or severe coughing. But it as a general thing exists from the onset. Pain in the muscular tissue above the pleura can be distinguished

by its being unattended with fever and not so much affected by pressure Dyspnoea exists from the very onset of pleurisy and the greater the pain harder will be the respiration.

When effusion has taken place the dyspnoea is aggravated and it will be in a greater or less degree according to circumstances If the other lung is diseased, the respiration is apt to become distressing. If the effusion takes place very rapidly the dyspnoea is greater than where the lung has time to accommodate itself to the change, by the slow pouring out of serum. Cough is another symptom of Pleurisy. It does not occur in paroxy-

ysms. In some cases it is absent, although the inflammation is great and the effusion into the pleura considerable. When cough does exist it is dry, or accompanied by slight expectoration. If bronchitis or pneumonia intervene, frothy mucous will be thrown up in the former and rust colored in the latter case. Much has been written regarding the position a patient assumes, who is laboring under this disease. From what I have read on the subject I do not think there is one position in which the patient lies more than another. In the beginning of the attack, when there is

much pain he is apt to lie on the sound side, or on his back, or perhaps he will sit up. But after effusion has taken place, the position is reversed, the patient instead of lying on the sound, lies on the affected side. The fever in pleurisy is generally high from the beginning, and in the acute period of the disease the pulse is very hard, and forms a contrast with the soft pulse of pneumonia or the small and contracted pulse of inflammation of the serous membranes of the abdomen. Pneumothorax is a frequent complication of Pleurisy and very often produces fatal results. Air may be introduced from

without that is by the puncture of a lung or the fracture of a rib. A vomica may make its way through the pleura and thus air will rush into the cavity. The air is almost always accompanied by effusion. The sounds produced are considerably modified from that of simple effusion. Percussion makes a remarkably hollow sound upon the upper and a dull sound upon the lower part of the chest. This dull sound follows the fluid wherever the laws of gravitation may cause it to fall. The auscultatory sounds are somewhat remarkable. It is said the patients breathing is like the noise produced by blowing into an empty flask; hence it has been called amphoric resonance. It is a ringing metallic sound

Cause. Cold is the common cause of pleurisy. It is also sometimes produced by mechanical violence, such as the puncture of a knife, or by the splintered ends of a broken rib. Or it may be caused by the extension of disease from other parts.

Diagnosis

Pleurisy may be mistaken for pneumonia. As soon as a slight effusion takes place into the pleural cavity it is made known on percussion, and as the effusion increases the sound becomes more and more dull untill the whole side becomes dull. This is not apt to occur in pneumonia. In case the effusion is not full, the dullness varies with the different positions assumed by the patient, which is another ground of distinction. The dullness comes on much more

quickly in pleurisy than in pneumonia It has been noticed within twelve hours from the invasion of the disease the induration of the lung is slow and the effusion of serum is rapid. Again in the onset of the disease, when the pain is acute the vesicular breathing is not so distinct on the diseased side. The walls of the chest are less expanded on that side, but percussion yields the same sound. The mediastinum may be displaced in pleurisy, causing the whole sternum to give a dull sound which is never the case in pneumonia As soon as effusion begins the vesicular murmur becomes less audible, and ceases entirely if the effusion be full. The bronchial voice is said to differ

from that of pneumonia, in that it is a trembling; thrilling cracked sound. It has been likened to the bleating of a goat, therefore its name: Aegophony. In Pleurisy sharp pain and a dry cough, or perhaps no cough precedes the dullness and there is not the crepitation or rust colored sputa, which are antecedent to the dullness in pneumonia. A lung made solid by inflammation does not distend the cavity, pleuritic effusion always does. We have the bronchial respiration in pneumonia it does not exist in Pleurisy when the side is every where dull on percussion the vibratory sounds caused by the patients voice are increased by consolida

tion of the lung, prevented by liquid in the pleural cavity. A patient having one solid lung is indifferent as to posture, but a patient having a full pleural cavity lies usually on or towards that side, and suffers dyspnoea if he attempts to lie on the other. Pleurodynia may be distinguished from Pleurisy by the absence of fever, and the general physical signs are wanting that characterize the latter disease. I will here mention under this head a form of Pleurisy that has not been spoken of. I refer to Empyema, or an accumulation of pus into the pleural cavity. The symptoms are said to be the same as those attending the ordinary form of Pleurisy.

A spontaneous perforation of the thoracic walls, will afford the only sure diagnosis. But the purulent character of the fluid may be inferred, if the effusion increases after the administration of medicines that are apt to promote absorption. Prognosis. Simple Pleurisy of one lung generally terminates favorably. It is most dangerous when associated with other diseases. Coexisting organic disease of the heart, liver, kidneys and tubercles in the lungs, adds greatly to the danger, especially the latter as they tend to keep up the inflammation. It is more dangerous in the old, than in the young and vigorous. There is a greater tendency to intractable effusion of serum

or pus in the former, of coagulable lymph and adhesions in the latter.

Treatment

The indications for treatment, are the same in the first stage of this disease, as it is for other acute inflammations When the patient is strong and robust with high fever and incompressible pulse, blood letting will unquestionably be of service. But if the patient is weak or debilitated from any cause the physician should be very careful in the abstraction of blood. The loss of blood would be beneficial in the former case and make matters worse in the latter. The lancet therefore when judiciously used in this disease will be of

great service. A patient should never be bled simply because he has Pleurisy. A saline purgative should be given, opium to relieve pain, and tranquillize the system, and remedies calculated to reduce the action of the heart. For the latter purpose, tartar emetic, veratrum viride, digitalis, and aconite are the best. Local remedies are important such as cups, mustard plasters and turpentine stupes. They may often be employed as a substitute for the lancet. Blisters it is said are not of much service in the first stage. After the pain has subsided, and effusion taken place, medicines calculated to produce absorption should be administered. Those used for this pur-

pose are hydragogue purgatives diuretics blisters, and those that are said to act as sorbefacients, Mercury and iodine are of the last named class. Among the first bitartrate of potassa, the citrate or sulphate of magnesia are said to be the best, and of the second class squill, digitalis, or the iodide of potassa given in some vegitable effusion. The patients drink should be regulated, for if he be allowed to drink "ad libitum", the quantity of fluid may be increased instead of diminished. If absorption progresses slowly, mercury may be given, at the same time attention should be paid to the condition of the patient. If there be a tendency to asthenia it should be administered care-

fully, and perhaps not at all. It is very important to maintain the patients strength. The diet should be nutritious and tonics with wine or brandy given. If these measures fail to effect the absorption of the fluid and its accumulation threatens the life of the patient, paracentesis should be performed for the purpose of allowing its escape. Though it sometimes fails to give relief and increases the inflammation, yet it often prolongs life and will occasionally save it. The operation is more successful when there is an effusion of serum although it is far more important if there is an accumulation of pus. Whether the wound should be closed or left

open will depend upon the nature of the fluid. It should be closed if it be serum, left open, if it be pus. When the pus discharged is offensive, and the progress towards recovery slow, it has been recomended to inject into the cavity a weak solution, of some antiseptic, such as creasote or carbolic acid

1869

To

The Faculty of the University of Maryland, as one — an inseparable whole — my common directors in one aim, I dedicate, with the highest regard, this, my Thesis. Tho little to them, yet much from me being the worth of all I am, and now I lay before them the results of too little learning, at their disposal, hoping the intention good may be appreciated, tho the deed be a "Widow's mite". To them as friends I say, let not a critics eye scan this ill-sown field with too little hope for a good harvest in the future, but remembering that — they like me were

once not only children of years but of ignorance, look not down from their high place to "laugh to scorn" the errors of youth, and him laboring in the dark; but as the great mind must have its companion, a noble and generous heart, let the approving smiles of their countenances reflect the kind light of excuse upon these dark pages succeeding, and with their good wishes upon "the worlds broad field of battle" send forth their

A Pupil —

An Inaugural Dissertation
on
The appearances of the tongue
&
Conditions of the Pulse
in different diseases.

Submitted to the examination of
the Faculty of the University of
Maryland
for the Degree of Doctor of
Medicine

by
Joseph Harris
of Maryland

1869

Such was the providence of our common mother, when she wrought that never changeable law, "that effects should follow causes". And the with one hand she has spread contagion, & evils innumerables in the midst of man to vex & disturb his life; yet with the other she raises him high in the scale of his being, superior to such enemies, with powers to relieve his fellow man, "Great King of all things, yet a friend to all": & with that great instrument, the understanding observe material disturbance in the harmony of action, & with a knowledge of natural consequences, rectify occasions of discord in the even way of life. Such is a knowledge of the greatest branch of learning which teaches, not by a process of reasoning, but discovered fact, that certain causes must produce

certain effects. Here the tongue & pulse conditions vary must have determining causes which it a physician part to know that his God-like work may claim success in the light of intelligent treatment. To the extent of such a subject as this, which contains within its expansive grasp the clinical history in part of an almost numberless variety of diseases, & which has no limit except with the end of human maladies, there is no intention of going, but will abridge a mountain task to diseases of prominence in the practice of medicine, the tongue, a compass in the doubt of knowledge, points almost with a guiding hand to three organs, from which spring nearly all diseases, or which are more or less affected wherever the ailment may lie. And that never ceasing stream of existence, that circulates & bears

with it life or death to our mortal frames, ebbs & flows beneath the weight of diseases, & brings most surely to our touch the condition of the sick. These two signs most powerful weapons in our early & true diagnosis upon which the favorable termination of a disease so much depends, are & have been of the first importance with Doctors of all ages, & which reveal to the skillful practitioner, through the senses of touch & sight perverted physiology far beyond the ken of mortal eye. These are the first points of inquiry & these to a great extent direct the beginning, course & end of treatment. for when the pulse is low & weak, wonted medicines that enfeeble the heart's action strengthen the links that bind us to this world, or will the tongue of Typhoid fever lips-dry after alco-

holic stimulation call for more evil? Such considerations stand high when man raises himself to practice art or man the master workmanship of Munificence. In the catalogue of diseases there is not one in which these symptoms are more characteristic than Typhoid fever, this grave malady, I believe, always presents morbid appearances of the tongue: with the accustomed stupidity of the patient, which the definition of the name implies, the mouth is allowed to hang open & the tongue receiving & retaining floating materials from the air upon its surface presents an ugly appearance. Tho this organ may be simply furred or frosted, yet it is oftener covered with a coating more or less thick, with variation as regards color, which has no significance. These coatings are sometimes thrown

off, leaving it reddened, & when this exfoliation or gradual thinning of the coating takes place with the tongue moist & somewhat of a natural color, a favorable termination may be anticipated & convalescence soon looked for. In the many variety of appearances, it may be reddened, smooth & glazed, & sometimes dry & hard caused by the patient breathing with his mouth open, often becoming cracked & fissured therefrom. Hemulmanes generally accompanies grave atactic symptoms, as in Delirium tremens & when this organ is with difficulty protruded, or there is difficulty or appearance for protrusion & withdraw it characterizing the lowest conditions of the disease, we may look for the failing powers of that organ, which presides over the vitalization of the human

Anatomy. And in the life bearing current there but a carrier of a death producing substance, there must also be a change, & by which the skilful physician marks the condition of his patient; whether he is able to bear the severity of the disease to its self limited end & nerves support to take him through, tho the pulse in frequency may be small & even fall below the average in health, these are but very mild or exceptional cases, for great frequency is a significance of great gravity & it is through the pulse generally the severity of the disease is determined, When its rise is above 120 per m, a very increased frequency denotes increased gravity & others above 130 per m calls for alcoholic stimulants. The pulse is rarely hard & resisting

but often vibratory & quick along with its frequency, showing increased action, but diminished power in the blood propelling engine of the Human being, & when there is a progressive infrequency & diminution in force, the powers of life are fast failing. The pulse sometimes retains its frequency during convalescence, but when there is a sudden change in it a new disease may be looked for. Typhoid, tho a disease resembling much Typhus, yet in gravity is only secondary, & to enumerate here the symptoms of Typhus would be only again describing Typhoid in a secondary form, therefore to note points of difference is alone necessary. In this disease there is more frequently a thick coating upon the tongue of a brownish or blackish

character, but it is less frequently reddened glazed & fissured. The mental act of pulsating & withdrawing the tongue displays the flagging powers of life & a weakness characteristic of a severer form of disease than the last. Sordes appear oftener earlier & in greater abundance. As does the tongue appear in this disease compared with Typhoid fever. So does also the pulse in its morbid significance. All in the patient is wrestling in the grasp of a more powerful disease, & its every change is accountable as in the affection last described. Intermittent fever comes next in its most harmless form & ~~prominence~~ in some localities, especially near marshes, & stagnant pools from which the miasm is supposed to rise. In its several sta

ges, so peculiarly different. There is not much difference as regards the appearance of the tongue, being generally furred or covered with a white coating more or less thick & dry during the hot stage, but the pulse changes somewhat, usually accelerated but small & feeble in the cold stage, which increases in frequency & becomes strong & full in the hot, but when the sweating stage comes on a general relief & sense of comfort succeeds, the pulse is slow & soft, & nature seems to cure her child for an intermission longer or shorter as just described. Simple Remittent-fever is a disease in character much like the last, having for its cause the same, different only in remitting & not intermitting as their names

expressed, the tongue during the first attack is generally furred & during the remission of the same the pulse rises in frequency & force, but when the second attack is experienced, the symptoms have more gravity, the tongue becomes more thickly covered with fur & presents a yellowish hue characteristic of a liver complaint. The pulse rises in frequency, reaching 120 per min. The prognosis in the simple forms of these diseases is favorable, when properly treated, but there is a pernicious form common to both highly dangerous to life. The pulse is small weak & rapid & often irregular. The tongue the natural sometimes is often or pale telling of congestion somewhere

internally & fevered, in worst cases it is cold. Yellow fever is another disease of a very pernicious kind but happily for the world generally it is practical to certain localities. The pulse is not usually much accelerated; it reaches 100 per m in some severe cases, it often falls below the average of health sometimes even to 30 per m: but it is very often weak, small & vibrating & from its great compressibility is called the "gaseous pulse". The tongue is moist & more or less coated, becoming reddened dry & cracked, & sometimes covered with a creamy coating, often yellow partaking of the color of the skin which is sometimes present & from which the disease derives its name, yet the course of the disease

may not subject the tongue to any patho
logical condition, but generally the varied
appearances are notable of severity or
stage of the disease. Next will be consid-
ered the diseases whose great diagnostic symp
toms are the peculiar eruption, yet they have
marked differences as regards the condi-
tions of the pulse & appearances of the
tongue from other diseases even those of
their peculiar nature giving to the practition-
er power to discriminate the one from the
other. Rubeola is a broad disease, com-
monly known as Measles, The pulse has some
acceleration & fullness in the stage of invasion,
but after the eruption its acceleration is
somewhat hastened & becomes less strong,
The tongue is coated & of a whitish appearance

& the elongated papillae protruding through its coating gives appearance of numerous red points. With the desquamative stage there is a general abatement of all symptoms & a rapid return to natural order of parts spoken of unless some complication or sequelæ be present giving symptoms peculiar to themselves. Scarlet fever is a disease attended with more feverishness of the surface & quickness of the pulse than any disease of its kind, tho it may be so mild as not even to incommode the patient, & like all diseases be unattended with danger, yet it too often has its malignant form & becomes a very serious disease especially to children. When pursuing its usual course it has these symptoms;

during the short stage of invasion the pulse is quickened & the tongue is a little disordered, but when the eruptive stage commences all symptoms increase more or less. The pulse in quickness rises to 130-40-or 50 per m & in malignant cases may go as high as 160 or over per m. The coating appears early on the tongue, & numerous red points can be seen upon it, formed by the papillae projecting through the coating. Under such circumstances this organ looks as if red sand had been sprinkled over its surface. This is not distinctive of this disease, being sometimes seen in others, but when the tongue presents a strawberry like appearance, caused by the exfoliation of the coating leaving the papillae enlarged, it can

be depended upon being a pathognomonic symptom of Scarlet-fever. Without complications or sequelæ, during the desquamative stage, the symptoms abate rapidly sometimes, but usually gradually. The worst of the eruptive fevers, the most dreaded and by the lovers of life, but the fashionable white mingle beauty, which this disease partly takes from them with the wreath of life, is Variola commonly known as small pox. This disease like all others of its class is subject to much variation in the acceleration of the pulse & in the 1st stage & the coating of the tongue. When the second stage comes on the fever abates & the pulse falls to its normal frequency or nearly so a point of great diagnostic importance. But when the suppurative stage is

ushered in by the bursting of the pustules the fourth & last change in the rash, the general condition of the patient is worst. Feebleness & much acceleration of the pulse are unfavorable in the prognosis. The eruption is sometimes present on the tongue. Diphtheria in an epidemic form, is a disease of great danger, ushered in generally with a chill & slight fever, it advances rapidly in severity - the pulse becoming often much accelerated & afterwards falling suddenly below the average of health, tho sometimes it is only moderately quicker or even slight during the whole course of the disease. Aside from frequency, the pulse is often weak & compressible, showing lessened power of the heart's action, & when without any organic

disease it is not only weak but irregular the prognosis is very unfavorable. The tongue is peculiar, the tip is usually red, but the body has a thick white fur-coating, which on the dorsum & towards the root is almost membraniform. Like Diphtheria. Cynanche Laryngitis or Idiopathic Croup is a disease affecting the respiratory organs the pulse is full & quick, & when respiration becomes difficult as it is in all cases when the system does not get its normal amount of oxygen, causes in this disease by a deposit of false membrane. the pulse becomes very frequent & feeble. The tongue is red at the tip & edges & coated in the centre & at its back with thick white fur. There is a desire cough of not much frequency, yet is

attended with great pain, generally the results of over indulgence at the table or of spirits, Calbo Gas. During an attack which come on periodically the pulse becomes accelerated but rarely rises above 90 per min, the tongue also is coated or furred, There are diseases in which these Constitutional symptoms are not so well marked as in some others & these are of the inflammatory kind. In Pleurisy the pulse is increased in frequency & strength as it is in all inflammatory diseases, but varying in a great measure according to the severity of the attack, the tongue may or may not have morbid appearances. The pulse of Pneumonia like Pleurisy is variable & ranges generally between 80 & 120 per min

with more or less fullness & hardness during the first & second stages. But if the third stage comes on not with resolution, but purulent infiltration grave prognostic signs accompany, such as more or less frequency & feebleness of the pulse. In children in this disease, as all others the pulse ranges higher - the natural frequency being more, & they more susceptible of irritation than the adult. During the suppurative stage a young children pulse cannot be recognized in distinct beats sometimes it being so quick & feeble. The tongue with the lips has a florid redness, often dry by breathing with a partially open mouth: it is sometimes red at the tip & edges with a thick white fur in the middle.

Bronchitis comes next in the list of diseases of the respiratory organs, as one of very common occurrence. In the simple form, the pulse is somewhat accelerated & the tongue natural or unduly moist. But in the capillary form, & especially in the young, the pulse according to the stage is very much accelerated, the tongue is usually moist or it may have a thin coating of yellowish fur.
The pulse in Pericarditis is more or less accelerated quick & vibratory & often weak from the mechanical pressure of the effused liquor in the peri-cardium.
In Sporadic Dysentery the pulse generally is little accelerated: great frequency renders the prognosis unfavorable.

but the patient with it moderately quiet may not always be safe. The tongue is sometime more or less coated, or may retain its natural appearance. With its white coating it has a red tip & edges & in general it is a tongue of a disordered stomach.

Of all the diseases heretofore mentioned this last is most sad & sure of terminating fatally. All ages & sex are its subjects, it makes no especiality when its cause is yielded, being a sad heritage from dying progenitors & theirs succeeding race to live with slow combustion of life & to die as it were when there is no life, too weak even to struggle for that all last-flutering breath. The pulse of Pulmonary

Consumption or Phthisis as an object of diagnosis holds an important place
In the first stage it is somewhat quickened, generally its frequency denotes the activity of the Tubercular deposit & if the pulse is habitually accelerated the disease is rapidly progressing. In some cases the pulse is not only quick but vibratory & compressible, qualities denoting morbid activity but weakened action of the heart. In such cases the disease runs its course in a short time, ending fatally. The acceleration is generally most towards the Evenings.
The pulse's quickness increases as the disease advances, being more rapid in the second stage than the first —

A Report
Of Twelve Surgical Clinics.

Submitted as an
Inaugural Dissertation
To the Consideration of the
Provost Regents and Faculty
of the University of Maryland
For the Degree
of Doctor of Medicine.

By Winslow Greentree
of Maryland

1868-69

First Clinic Oct 21st

Case First

Necrosis occuring in a White Youth aged about 19 Years; Located on the Tibia of the left leg: This disease as you are aware is the death of a portion of the bone: It has involved the knee to such an extent as to destroy motion of the joint. The Limb below the knee is useless to the patient. besides being a heavy drain upon the powers of Life requiring amputation which I shall perform above the knee. The circular amputation is best adapted to the case. It is always well for the surgeon to wait a sufficient length of time before resorting to amputation trusting to the resources of Nature which is great in the Case before us: As We have waited as long as We can with safety to our patients life. We will give the patient Chloroform and perform the circular amputation.

To be dressed with cold water dressing. which has many advantages. One is it is always at hand and is cooling and pleasant to the parts besides almost anyone can attend to the dressing. That has any qualification to attend to a sick room. These dressings can be kept continually wet with water This being our first clinic it has taken the whole of hour. Although We had expected to have shown other cases which will be shown at our next on Saturday Morning

Second Clinic October 24th

Case First

Fistula in ano occuring in a Colored Man aged about 50 Years This disease occures in strumous habits: and often occures in patients whose Lungs are diseased with Phthisis Pulmonalis The disease as you are aware is a pocket formed always along side of the rectum in which a portion of faeces is deposited when the patient is at stool making it one of the most painfull diseases that come under the Surgeons attention This pocket or fistulus sack requires to be laid open. I shall first make a carefull examination with my finger which should always be done: I shall now wait as soon as the patient is sufficiently under the influence of Chloroform I will introduce a curved bistoury and lay this pocket freely open this incision shall be left open by lint thereby making the wound heal from the bottom: it is after forming a part of the rectum

The patient to be kept upon tonic treatment and a nourishing diet this is a disease in which the Practitioner may be led astray as to the nature of. He being told of the patient having piles. but the Surgeon should make an exploration of the rectum and not allow himself to be deceived in such an important disease involving the patients life and his own reputation which he should always keep in view

Third Clinic

Oct 28th

First Case

Fracture of the Clavical occurring in a small white boy caused by counter stroke. This fracture You see is about the middle of the bone. This fracture is set as I shall soon demonstrate to You: by first placeing a roller under the arm pit. bandageing the arm to the body a little

backward and inserting the elbow with hand upon the chest. In the treatment of fracture you must always see to the bandage. For the least misplacement by the patient or from any cause may give you when well a deformed bone which will be injurious to your reputation and the patients comfort

Second Case

Fracture of the Radius of the right arm in a white man aged about 20 years. has been under treatment in the house for some time. shown to the Class for the first time; Calus is forming. The patient is doing well. The fracture of this bone alone requires only one splint. the Ulner acts as a splint. If both Bones were broken we would then have applied two splints I shall remove the splint in about three weeks and place the arm in a starch apparatus which is best made of binders board or thick past board

and applied to the arm with bandages which becomes neatly adapted thereto when cool

Third Case

Fracture of the Tibia & Fibula of the left leg occuring in a white man aged about 46 years. has been under treatment some time in the house shown to the class for the first time. The Anterior splint {of Prof N R Smith} is applied in the case. The patient is doing and will no doubt have a good leg after the removal of the splint

Fourth Case

Fistula in ano in a Colored man. shown to the class in the First Clinic. this patient was operated on as you seen. the fistulous opening has extended into the Perineum which lengthens its duration; and endangers his life. but in this case we shall expect. a favorable result

Fourth Clinic Oct 31st

Case First

Polypus occuring in the right narius of a white boy aged 9 years. This growth is of frequent occurance in the nose. I shall remove with a pair of forceps adapted to that purpose. This growth or polypus you will meet with more frequent in early life. it always requires to be removed as you have seen me do in this case. I shall order for the patient a powder to be used as a snuff. composed of Alum & Sanguinaria for its astringent effects upon the bleeding vessels which are generally controlled by such remedies

Case Second

Cataract of both Eyes occuring in a Colored Woman aged about 60 years. The right eye I shall operate on The patients head to be supported by a competent person. I shall introduce a needle into the eye I have for that purpose

and elevate and then lower the outer end of the needle. The object being to break up the veil in front of the expansion of the optic nerve. Thereby allowing the rays of light to enter the chamber of the eye We used Extract of Belladonna upon this patient to dilate the pupil but with little effect. The patient to be kept in a proper lighted room. We shall expect a favorable result in this case

Case Third

Fistula in ano occuring in a white boy aged about 12 years. The operation being very painfull and our patient young we will give him Chloroform.
The rectum I shall explore with my index finger. Then introduce a probe and lay freely open with a curved bistour the pocket of matter & faeces. To be kept open with lint so as to make it form a portion of the rectum when healed the patients bowels to be kept in a proper condition

So as not to interfere in the healing process The patient is very young to be a sufferer from this disease

Note

The Complete fistula which has one external opening near the anus and another into the bowel above the sphincter muscle. There may exist a blind external fistula which has no opening into the bowel although it might reach the outer coat. And there might be a blind internal fistula which opens into the bowel; but not externally. And at times may be diagnosed by a redness and hardness near the anus The treatment in all the cases are the same which is to lay them freely open. for if you do not. and allow the faeces to accumulate in them they will grow worse and become incurable for every time the patient has a passage some faeces loge in this cavity, but by keeping it open it will generally affect a cure

Case Fourth

Coxalgia or hip disease occuring in a white man aged about 40 years: The hip joint of this patient has become angolosed from the destruction that has taken place at the head of the Femer. and has to form new relation before any use or motion can be made of it by the patient: This disease is of long duration and attended with a great amount of suffering: This disease occurs mostly in scrofulous subjects. This you see is in the left hip joint which I shall lay open freely to allow puss to flow therefrom which must be done in all such cases as this. He is on Tonic treatment to keep up the resources of nature attendant upon the disease

Note

This disease usually begins by a slight pain in the knee and some lameness The pain is generally felt first in the knee but when the cartilages of the joint are

involved the pain will be severe. There is probably no disease that more mistakes are made in than this; When this limping begins the attention of the patient is called to it and then informs his parents. The physicin is called in he pronounces it Neuralgia or perhaps rheumatism and the child is allow-ed to run about untill in many cases too late to do any good after the real disease is found out. When a child is brought to You after learning the history of the case and if any of the symtoms exist which lead you to suppose hip disease The great difficulty then to be overcome is convincing the pairents that such is the fact. The Surgeons duty is to engage perfect rest; for if You allow Your patient to run about you cannot stop the disease The acetabulum may be absorbed away or the head of the Femer and the limb shorten-ed and the pubis tilted to one side to adapt to its new relations

If this disease is discovered in time and you keep your patient perfectly at rest you may in most cases effect a perfect cure. Although it may seem a long time to the patient to be thus confined But if you can succeed in makeing the impression on their minds they will see the necessity of so doing; which will result in the restoration of the limb

Case Fifth

Cataract occuring in a colored man aged about 56 years. This patient I operated upon some time ago. shown to the class to demonstrate the loss of nurvous power in the Optic nurve. supplying the organ with vision. You will percieve in the case of this patient our operation has fruitless or at all events not as we should have desired in restoring such an important organ as sight The fault was in the nurvous function of the eye; and no fault in the operation

Fifth Clinic November 4th

Case First

Chronic Ulcer occuring on the left leg of a colord man aged 36 years. last March he recieved a wound from a cythe which you see has never healed for the want of proper attention. Now it is an ill condition ulcer. I shall courterize the ulcer with dilute Nitric Acid. to surplant diseased action to be dressed with simple Cerate and to be bandaged from the toe up to the knee. The bandage you will find if applied as it should be is of great importance. to hasten cure. It prevents congestion of the blood vessels which is beneficial in the case

Case Second

Epithelioma occuring in a white woman aged about 55 years in the left nares. We will give the

Patient Chloroform and remove the Tumor. The Maxillary Artery I shall tie. To be dressed with dry lint. If the tumor threatens to return I shall cauterize it with Costic Puttasen

Case Third

Parenichia occuring on the third finger of the right hand of a small white girl. This is a very painfull disease owing to the great sensibility of the parts. I shall give Chloroform and remove the nail. Cauterize with Nit Silver and dress it with simple dressing which will effect a permanant cure.

Case Fourth

Caries of the wrist Joint occuring in a white man about 35 years of age; Was caused by a strain thereby causing ulceration of the cartlige also involving bothe arm and hand bones. I shall only probe at present. and endevor to save the hand

But think. more than likely it will require amputation. The Surgeon always should endeavor to save such an important member as the right hand or even a portion of it. I shall apply a splint to the palmer side of the hand and bandage it snugly. To be kept wet with whisky & water. The object is to surpress swelling. also to keep the hand straight and trust to the resources of Nature a little while longer

Sixth Clinic November 7th

Case First

Fracture of surgical neck of the left Femur. Occuring in a white aged Woman. caused from a fall. shown to the Class for the first time. Owing to the Patients age this fracture will be a long time getting well. You will also find that it will be some two inches shorter than the oposite side when union took place.

Case Second

Chronic Ulcer of the left leg of a Colord man. seen by the Class at the last clinic. His condition is somewhat improved. The application I applied I shall now apply for the last time. The Ulcer to be dressed with plain dressing. and bandaged as before from toes to the knee which will be proper in the case before us

Case Third

Fistulous opening in the Perineum occuring in a Colord man. seen by the class before and operated upon There are some sinuses that require to be opened now: which I shall do by making free incisions. it being the only way to effect a speedy and permanent cure. The patient is improving and will get well

Case Fourth

Gun shot wound in the left shoulder occuring in a white man aged 30 years. This is an old wound of several years standing which is not disposed to heal. I shall probe the wound at present only. This wound has done as you percieve great mischief to the patients health We will put the patient upon nourishing diet and pills composed of
Iron By Hydrogen. Sulph Quin & Nux Vomica one to be taken 3 times a day

Seventh Clinic November 11th

Case First

Fracture of the Clavical occuring in a small white boy. This injury occured about two weeks ago. He is improving. Callus is forming. The Shoulder to be kept outward and backward. so as not to allow the bones to overlap. bandage to be looked after closely otherwise by misplacement or loosening of the bandage You will or may have some deformity when the fracture is well

Case Second

Simple Ulcer occuring on the left ankle joint of a White Woman aged 52. Years to be kept clean and dressed with simple dressing and bandaged. That being that is necessary to effect a cure in the case before us

Case Third

Pralapsus of the Rectum occuring in a small white girl aged about 6 Years in most cases of this kind vegitable

Astringents applied and returned is all that is necessary. but in this case I shall apply dilute Nitric Acid in some cases Alcohol will answer the purpose

Case Fourth

Chronic Ulcer on the left leg of the Col Man. Seen by the class before The Ulcer now presents a healthy appearance but healed very favorably at first. All that is necessary to effect a cure is to drop with simple dressing and to keep up the bandage in the manner I have shown to you before

Case Fifth

Fistulous ulcer in a Col man. Seen before on several occasions by the class. This patients condition is improving. but his case has been very obstinate. requiring to be laid open several times. from the continual tendency to form sinuses That difficulty I have now overcome and a cure will soon be effected. To be dressed as before and kept upon Tonic treatment

Case Sixth

Fracture of the left leg in a white man. The Anterior Splints have been on a sufficient length of time. I shall remove the splints and apply a starch apparatus. To be kept bandaged. When We remove the starch apparatus we will only apply a bandage. even after the leg will be good for use in a moderate way

Case Seventh

Epitheliona cancer of the left Eye occuring in a white man aged about 54 years. The patients head supported by an assistant. the lids to be kept apart and the tumor to be removed with a suitable pair of scissers. All such growths require simi lar treatment as You have seen me perform on this patient

Eight Case

Ulcer occuring on the ankle joint of a White Woman. This ulcer I shall treat as You have seen me do on several occasions befor. by applying dilute Nitric Acid to supplant diseased or to give a health tone thereto. To be bandaged and kept wet with whiskey and water. as simple dressing which I think will effect a speady cure

Case Ninth

Caries of the right wrist joint. occuring in a White Man. was shown to the Class befor. I expect some piece of bone to ulceriate and come away befor a cure is effected. At present I shall make a free incision assisting nature to relieve itself. reapply the splint and keep upon Tonic treatment The patient is on.

Eight Clinic November 14th

Case First

Hydrocele occuring in a White Man aged 50 Years in the left Testicul and rupture of the right. I shall inject the testicul with a solution composed of Sulph Zinci in the usual way by introducing a Cannula then introduce the fluid therein The testicls to suspended by a suspensary bag or bandage for that purpose.

Note

Hydrocele is a collection of serum in the Tunica Vaginalis the swelling is of a pear shaped and differs from Inflimation of the Testicle. Its Salidity weight and also by it being more or less transparent It differs from Hernia by its neck or the size of the cord & by its beginny at the bottom of the scrotum and by not delal ing when the patient Coughs

Case Second

Primary Syphilis occuring in a young white man aged about 22 years The chancre purpura. I shall Apply Nit. Acid to a wash to be applied composed of ℞ Chlor Mercy ʒi. Aqua ℥ii And Pills composed of Blue Mass gr c 3 times a day untill his gums are touched

Case Third

Caries of the Clavicul & Ribs occuring in a Colord Man aged about 34 Years. I shall expect to remove some pieces of detached bone when they become loose. The patients strength to be kept up by generous diet and to take Pills of Sub Carb Ferri & Guaiacum 3 times a day

Case Fourth

Epithelioma cancer in a White man on whom I operated on at one of our last clinics. his condition is improving. We shall apply a solution

of Sulph Cupri 5gr to the ℥ of Aqua as a wash which is all that remains to be done in the patients case to effect a cure.

Case Fifth

Caries of the wrist joint seen by the Class on several occasions before. The bones of the arm and hand are becoming so much involved. The cartliges also. that it is doubtfull as to a cure being effected. The hand may have to be amputated after all our efforts to save it

Case Sixth

Chronic Ulcer in a Colord man examined. Seen by the Class on several occasions before. The patients condition is improving. it now presents a healthy appearance We will continue the simple dressing and bandage. He will soon be well and ready for his usual labor

Case Seventh

Gun Shot wound of the left shoulder in a white man examined seen by the class before. I shall probe the wound to discover if any pieces of loose bone can be felt. Nothing to be done at present. It is very doubtful about saving the patients life. The wound has been a heavy drain upon the powers of life. We will keep up the Tonic treatment and trust to the resources of nature which is never to be lost sight of in such cases as Gun Shot wounds

Ninth Clinic Nov 18th

Case First

Fracture of the outer Condyle of the left Elbow joint occuring in a small white boy. The treatment of this fracture is to put the arm in an angular splint and to be kept properally bandaged untill union takes place

Case Second

Fistula in Ano examined. occuring in a Col. Man seen by the Class on several occasions; The patients condition is improving which appeared obstinate at first but now a cure is well nigh effected and we will soon be able to discharge him

Case Third

Hydrocele examination of the left Testicle occuring in a White Man. Seen by the class on last Clinic When I operated upon him it may become necessary to inject the testicle again before we can effect a cure

Case Fourth

Fracture of the Fibia and Fibula Examined. occuring in a White Man. Seen by the Class before. The patients condition is improving calus is forming and he will no doubt have a good leg

Case Fifth

Prolapsus of the Rectum Examined. occuring in a White Girl aged 4 Years operated upon at a previous Clinic. I shall apply the Acid Solution again to produce cicatrization

Case Sixth

Caries and Ulceration of the cartlidges of the wrist joint occuring in a White Man Examined. This patients case is unusely slow and tgems requiring a long time to effect a cure, I shall wait and trust to the resources of Nature a while longer

Case Seventh

Gun Shot Wound of the Shoulder examined occuring in a White Man Seen by the

Class before. I shall expect in a few days to be able to remove some bone pieces of dead bone. The patient to be kept upon the same Tonic treatment

Case Eight

Chronic Ulcer. Examined occuring on the left leg of a Colored Man seen by the Class on previous Clinics. The patients condition has so much improved that it requires very little more attention further than to be kept clean and simple dressing applied

Case Ninth

Fracture of the neck of the Femur occuring in a White Woman shown to the Class for the second time This patient has and is still suffering considerable pain. Her condition is improving and We shall expect a favorable result from our treatment.

Tenth Clinic Nov 21st

Case First

Ulcer on the left leg occuring in a White boy aged about 11 years. This presents the appearance of a heathy Ulcer. Nevertheless it may result in Necrosis of the bone and to prevent that I shall lay it open to prevent further mischief to the leg. I will order a poultice with simple dressing

Case Second

Prolapsus of the Rectum in a small white Girl: seen by the class before it seems to progress slowly to hasten cicatrization I shall apply the Acid Solution once more and expect it to be the last

Case Fourth

Hydrocile of the left Testicle in a white Man whom I operated upon at some previous clinic I shall apply Iodine ointment and still continue the suspensory bandage. The patient I will cure

Eleventh Clinic Nov 25th

Case First

Orchitis occuring in a White Man aged about 30 Years. seen for the first by the class I shall order a Solution of Acete Plumbi for its astringent effects and the patients bowels to be kept open by mild appenients which will soon effect a cure in the case before us

Case Second

A Severe Burn occuring in a White Girl about 11 Years old this happened six months ago. Seen for the first time by the Class; The effects are such from the contraction of tendons as to make the joint stiff, and render the arm completely useless. I should advise amputation for it will be an encumbrance to the patient

Case Third

Caries with ulceration of the Cartiges of the wrist joint in a white man seen on previous occasions. His condition has improved and we expect a cure

Case Fourth

Prolapsus of the Rectum in a small White Girl. Examined before the class The patients condition has improved rapidly since we last seen her. cicatrization is nearly complete. requiring but little further treatment untill a complete cure is effected

Case Fifth

Ulcer of the left leg in a white boy seen at the last clinic. his condition is much improved. I shall order for him. Syp Iodide Perry gtt x 3 times a day. and bandaged as usual

Case Sixth

Ulcer on the left leg of a Col Man his condition is improving. I shall order for him a solution of Sulph Cupri gr ii to the ℥i of Water. keep the bandage on and his leg will soon be well

Twelvth Clinic Nov 28th

Case First

Dislocation of the right hip joint occuring in a white Man. We will administer Chloroform I shall elevate the knee. carry it over his chest give it a sudden jerk and it will slip in place again. There is very little after treatment. keep the patient at rest,

Case Second

Caries of the left bone occuring in a small Negro boy I shall extract the bone specie adjoining the skull. the small Artery ligated, he also has an abcess on his arm We will give him Syp Iodide Ferri gtt xx 3 times ad ay.

Case Third

Ulcer on the left leg of a Colord Man seen before his condition is improving fast. Soon be able to be able to discharge him and allow him to go where he thinks proper

[illegible]

[illegible]

Respectfully submitted to the

Comptroller [illegible]

[illegible]

Francis D. Foreman

Esq. Maryland

January 1869

[illegible] for consideration is

[illegible] which performs an very

important office in that most won-

derful structure the human body. so

wonderful so perfect so complicated

is this beautiful piece of mechanism

that it can come from no other com-

than a divine maker, a model of

that glorious being upon whose

face no mortal has ever looked

and lived. And while we strive to

understand and appreciate the divine

we are lost in wonder and amaze-

Just as we proceed [illegible] onward

in our investigations which reveal

to us the marvellous [illegible]

the perfect [illegible] of its operations.

The Circulation is the grand [illegible]

of life [illegible] has work to render a powerful

Hydraulic apparatus present, which

works so noiselessly so efficient [illegible]

so beautifully that in its normal

condition the individual be scarcely

aware of its existence, The circulatory

apparatus consists of five different

parts. 1st the Heart 2nd the arteries

[illegible]

[illegible] muscular organ situated

in the thorax nearly in the

[illegible]

[illegible]

[illegible] half [illegible]

each side of the [illegible]

The [illegible] and [illegible]

The auricles are divided into two [illegible]

[illegible] the auricular ventricular valves.

The Blood flows into the auricle [illegible]

Heart from the Venacavas and into the

left auricle [illegible]

are filled the Auricule Ventricular valves

close and become tense which yield

the first sound of the Heart due to the

closure of the valves. The Ventricles then

contract and force the blood into the

Aorta on one side and the Pulmonary

artery on the other side

followed by the closure of Aortic and

Pulmonary valves which produce

the second sound of the heart, which

is followed by an interval of silence

[illegible]

[illegible] which produces an [illegible]

[illegible] in the valves or heart itself or

a change in consistency of the blood

followed by an alteration [illegible]

which can be readily appreciated by

experienced ear and are invariably

[illegible] signs. The bile has

passed through the intestine. The

[illegible] part of the [illegible]

[illegible] the [illegible] [illegible] [illegible]

[illegible]

[illegible]

by the successive branching of its vessels

communicating with the Heart and

Aorta at one extremity and with the

Capillary plexus at the other, this vascular

system is filled [illegible] with the circu-

lating fluid. Here the blood is moved

onward principally by the force of the

Heart but regulated and modified

by the elasticity of the vessels, the circu-

lation is in different parts of the

system [illegible] the [illegible]

[illegible]

[illegible]

[illegible] coat is composed of elastic tissue

[illegible], while in those of the medium size

they are composed of both muscular

and elastic fibres, and in the small

sized arteries they are exclusively

muscular fibres which compose the

[illegible]

in a circular manner, when the

blood is driven into the aorta by the

[illegible]

[illegible] when present.

smaller arteries which in turn

act upon their contents, and the

[illegible] contract till [illegible] passes [illegible]

and drive the blood into the capillaries

[illegible]

The separation in this [illegible]

cells commences the process

of nutrition. Actually [illegible]

[illegible]

[illegible] through the [illegible]

[illegible] other [illegible]

[illegible] of the Tissues and consists of [illegible]

[illegible] vessels which permeate

the vascular Tissue, in every direction.

They are continuous with the terminal

ramifications of the Arteries on

the one hand; and the commencing

rootlets of the veins on the other hand.

In size they are about $\frac{1}{3000}$ of an inch

in the human subject. They have

[illegible]

with the Internal arterial Tunics

in the Capillaries the Blood flows on in a [illegible]

[illegible]

[illegible]

The [illegible]

The blood [illegible]

[illegible] its nutritious

[illegible] Carbonic Acid

Effete matter which exists [illegible]

The force which causes [illegible]

[illegible] through the Capillaries

[illegible] due to the action

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

per second or about two inches per minute. In different organs the blood undergoes different changes.

The Veins like the Arteries [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] which is accompanied [illegible]

[illegible] lity of white & brown

tissue which enter into their

composition, [illegible] position

of the nervous system to their inoculat-

ating with each other. They convey

[illegible]

And depends upon [illegible]

[illegible] to pass through [illegible]

[illegible]

regular time accurately, [illegible]

blood which takes different

routes to different organs will

return to the Heart at a different

period, the return from the Heart

[illegible]

that which is sent to the inner

medulla, and the [illegible]

circulates in the abdomen

[illegible]

the action of decompo-

produce a corresponding

in the phenomena of the circulation

in one organ the blood leaves

more fluid than it absorbs in

another it absorbs more than it

leaves. The venous blood consequently

has a different composition as it

[illegible]

and absorbs

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

also dependent upon the chemical and nutritive action taking place in capillaries vary in a similar manner. In the same [illegible] changes from [illegible]

In the capillaries of the [illegible]

[illegible]

[illegible]

The circulation

simultaneously

organs, so complicated

that had it not been

tal Harvey. It may

AN

Inaugural Dissertation

ON

Opium

Submitted to the Examination

OF THE

Provost, Regents and Faculty

OF

PHYSIC,

OF THE

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

DOCTOR OF MEDICINE,

By

R. V. Guyton

of

Maryland

Session of 1869

Opium

From the earliest history of Opium, it has been known & used both as a Medicine & luxury. In regard to its Chemical History, Opium is probably the best known of all the vegetable extracts or inspissated juices used in Medicine. It has been the subject of numerous tabular experiments & analytical investigations, & the result of these fill many interesting pages of Organic Chemistry. Opium is the dried juice of the Poppy — (Papaver Somniferum) has been familiar as a Sedative of pain from the earliest — periods. This is partly shown by the name Poppy in English & Papaver in Latin, which are said to have been given to it

It was commonly mixed with the food of young children (Paregoric) to ease pain & secure sleep. In this country, the chief use of the Poppy is as a medicine. This important drug is obtained by making incisions into the capsules or seed vessels of the Poppy plant when they are nearly ripe, allowing the milky juice which exudes to thicken upon the capsules for half an hour, & then scraping it off. The incisions are made downwards through the outer skin only. For this purpose a small knife, is used, which consists of three or four minute blades fastened together. The knives make as many parallel incisions, which allow the juice freely to escape.

Of this species of Poppy there are several varieties, of which the two most useful in medicine, are known by the white or (Album) & Black or (Nigrum) the former of which is supposed to yield the greatest quantity of this very valuable drug. The white Poppy is annual with a round, smooth, & erect branching stem, usually rising two or three feet high, but sometimes five or six feet in a favorable situation. There are also several varieties of Opium, but the best Opium of Commerce, is a soft mass, of a reddish or blackish brown color, a waxy lustre, a strong, disagreeable odor, & a bitter, acrid nauseous taste, which remains lingering in the mouth. It is

Poppy cultivated in Asia, Turkey, Persia, & India. The Opium which comes from Smyrna is most esteemed in the European markets, while that which is produced in India is the most extensively used in the Eastern Countries. This variety of Opium, is produced in the Turkish — Provinces of Anatolia" & exported from — Smyrna & Constantinople. Though — generally believed to be a native of Asia, this species of Opium the — or Poppy, grows wild in the South of Europe & even in England where its seeds were supposed to have been taken at a very early period. It was cultivated by the ancient Greeks, & is mentioned by Homer as a Garden plant

In this Country it is found only in the form of an Oriental flower. Opium is generally found in market in masses of a round disk or irregular size & shape, from a half to two pounds in weight. Originally probably spherical, but usually flattened, in consequence of the pressure which they are subject while yet soft in the Case containing them. On their outer surface are the leaves, or rather the remains of the leaves in which they were originally enveloped, & which cling to them in greater or less numbers. The Papaver Somniferum, as Pharmacists, is almost the only variety kept in our retail shops, but inferior specimens are often sent into market, various-

and in different degrees adulterated,
& frequently so much so as to unfit
them for use in the Shops. The adul-
terating Materials are an extract —
made from the bark, grapes & fruit from
their Seeds & Crusts, different Gummy
Mucilages, licorice, minute Stones, & some not
very minute, for I have seen them —
as large as the end of my thumb & pin
of Iron, & some bullets & shot. This drug
is & has always been, the most valuable
of all the different Kinds of Opium —
in Commerce, during, the last days of
the struggle, Opium advanced in price
from Six dollars 56" to twenty dollars
& 2/ per pound & being an importation
owing to the immense duty, it is now —

Worth in the Baltimore Market, $11.50 per pound. The greatest yield of good Opium in the Indian peppins, is stated to be 41 lbs per acre, & the average to be 20 to 25 lbs. As a narcotic indigenous, Opium is used in one or other of three ways. It is scattered in the Bois Blanc, in the form of Pills, or in that of the tincture, as our Common Laudanum; or it is smoked in small pipes after the manner of Tobacco. The first practice prevails in Mahomedan Countries, especially in Turkey & Persia; the second among Christian people, when individuals happen to become addicted to this baneful practice. The Apothecaries, even in this City (I am sorry to say);

Encourage the baneful habit, by manufacturing an article, not of sufficient strength for medicinal purposes, which they sell to these poor Miserable Creatures at reduced prices. This, I think is encouraging the practice in every sense of the word, & should be prohibited by law, with Certainty has a demoralizing Effect, The third form (smoking) is a habit which prevails to a very great extent in China, & the Islands of the Indian Archipelago. In preparing it for smoking, the Chinese" Extract from the Indian Opium all that water will dissolve. This is generally from one half to three fourths of the

when night, they evaporate
the liquid Extract to dryness, &
make it into small Pills which they
put into long pipes, often made of
Silver, they then inhale a few puffs
at a time, or a single long puff, &
return the smoke through the nostrils.
This they repeat till the necessary dose
has been taken. At Singapore, the
mode of using it is much the same,
as in China. The Opium Shops,"
says Dr B.L. Bull" (to whom we are
indebted for a very interesting account
of his travels in Eastern Asia including
China & Manilla,) are among
the most extraordinary sights at
Singapore. It is inconceivable —

Day. This Gentleman with whom I
He. Smoking Sent this Deplorable drug
at the Ship Windows. They then retire
to the interior, where a Number of
Sickly looking, persons, in the last
stage of Consumption, haggard, &
worn down with Care, are seen —
Smoking. The drug is sold in small
pieces & for ten Cents. He, Can purchase
enough of this life, & not only life, but
Soul destroying drug to produce
the desired effect. With the Opium
is furnished a Pipe a lamp & a
Couch to lie on, if such it may
be Called. The Pipe is of peculiar
Construction & is in part of Metal
having an interior or Cup first large

enough to contain a pipe the size of a pea. Opium is difficult to ignite & it requires much management on the part of the smoker to obtain the necessary number of whiffs to produce intoxication, in one habituated to its use. He says the couch is a rude bench, but often a mat on the floor, with a small raised bench & with the frequenters thereto, is generally occupied by two persons who have a lamp between them. The effects of opium in any of the three ways of which I have spoken are nearly the same, varying of course, with the quantity taken, with the constitution of the taker & the frequency of it, —

prominent. The essential & primary
action of the drug is upon the nervous
system. It acts in a way similar to
our Spirituous liquors & is chiefly
as a substitute for these that it is
used. It possesses a wonderful power of
sustaining the strength, which it is not
found in Alcoholic drinks & of enabling
men to undergo fatigue & continue —
exertion under which they would other-
-wise inevitably sink. Thus those who
carry messages through the provinces of
India, when provided with a small
piece of Opium, a bag of Rice & water
to draw water from the wells, perform
almost incredible journeys. The
inhabitants of eastern Countries, who —

hard for many days & night continually, make break use of it & with a few dates & a lump of coarse bread, they can traverse the trackless desert amidst privations & hardships which could only be supported under the influence of this drug, Even the Horses in the East are sustained by its influence. De Quincy & Madden & Coleridge, became habituated to its use & found it very difficult to break off. The former, took it for the first time in the form of Laudanum, to dispel pain, & in consequence of its seductive influence could not resist the temptation until he found that unless he died, it must be his inevitable ruin. The influence of Opium, is described by

These symptoms, as being very agreeable to the other effects of the drug, the spirituous influence of the drug is an [illegible] following upon opening dispersion. Relaxing for upon [illegible] & a tendency to sleep. The mouth & throat also become dry; the thirst increased; hungry, [illegible] & the [illegible] is usually been hoarse. When large doses are taken, all the other effects are hastened & heightened in proportion. The period of dispersion comes on sooner; the prostration of energy increased, leaving sleep, with or without dreams, the pulse becomes feeble, the tongue strongly coated & if enough has been taken death ensues. Of course all these effects are increased

by the constitution of the individual; by the length of time he has accustomed himself to take it, & by the circumstances in which he is placed. I have noticed also, that when stupor comes on, or when the individual is under the influence of Opium or Morphia that the pupils are contracted, which has been noticed by others & has led them to suppose that when poisoning has taken place by Opium or by any of its alkaloids that Belladonna, as it has an opposite effect, by causing the pupils to dilate, would have some antidotal power over them & in view of this fact have given it a place in the catalogue of antidotes for poisoning by Opium.

Upon all persons, and under all circumstances the effect of Opium like ardent Spirit, taken in large & repeated doses, is equally melancholy & degrading. A total attenuation of body, a sallow yellow — Countenance, a lame gait, a bending of the Spine & glassy deep sunken eyes, betray the Opium eater at first glance. All of these effects I have seen from time, to time; Having been in the drug business for nearly six years & during that time having been frequently applied to, by these poor degraded Creatures, for Opium in all its forms, but more frequently in the form of Laudanum, but being very much opposed to the sale of it for this purpose made it a point to refuse

on all occasions. I remember of one day, amusing little circumstance in connection with the sale of opium to these people; I was so forlorn, on being applied to for opium or mother laudanum & having refused, surprised the party, to my surprise, the same bottle came back to the store in which I was engaged, to be filled for a lightning druggist, he not having the laudanum & desiring to effect the sale concluded to purchase the desired amount. This is one of the tricks of trade. Oh! "Then when the baneful habit has become confirmed, it is almost impossible to break it off. The torment when deprived of it, one is as wretched as the hip is complete when

under its primary influence. I have been informed that the Opium Eater after long indulgence, becomes subject to nervous pains, to which Opium indeed brings no relief. He seldom attains the age of forty if he have begun the practice early. Of this power of destruction, even on the best delicate & sensitive organisation & of the absolute slavery to which it can reduce even the stronger mind among us, we have a remarkable example in the Celebrated Coleridge, of whom can I have previously spoken. For many years Coleridge was a slave to Opium & the pain which he became addicted to its use, was by having been afflicted with swelling

in his Nose for some time. & having met (in a Medical Journal) with an account of a Cure performed in a similar Case, by rubbing with Laudanum & at the same time taking a grain dose internally, I concluded to try it in his Case. For a short time the remedy acted like a Charm, but it was only for a time, for the swelling continued & could not be removed by the use of Laudanum. - but I can not go through the dreary history, sufficient to say, that effects were produced which were but very easily removed, & Elvidge was a slave to Opium. Subsequently, while living at the House of a friend in Bristol, "he put himself to

in the hands of a medical man; & for the most humanity part of the case entitled itself to it until he was pretending to be gradually been under medical instruction & his friends were congratulating themselves that he was absolutely cured by being — brought down to twenty drops a day. He was all the while buying laudanum secretly, & drinking it in larger doses than before: how his moral sense must have been overborne & by how powerful a fascination before he could have stooped to deception so degrading as this. Coleridge lived twenty years after this & recovered the evil habit; but after a great many struggles & tortures, like

[illegible] It is impossible to arrive at anything like an approximate idea of the quantity of Opium consumed by the different nations of the world, in the Countries which Opium is cultivated, it is supposed that the quantity consumed by the inhabitants of the Opium districts, is so inconsiderable, that it is a Circumstance of great Moment if the Government could be made incredible. In Bengal, in India, at least Six millions & half of pounds of Opium are annually bought by the East India Company, from the Native growers & manufactured into a Marketable Commodity. The produce this quantity will require upwards of three thousand three hundred & ninety lands for its cultivation

Now, the average yield is from 20 to 25 lb. per acre; besides this, the great consumption in India also must be immense. In China also it is used to a very great extent, but not to so abundantly as in India. The consumption in the United States & Great Britain is of comparatively very little importance with that of India & China. It is known greatly on the increase. This implies either the application of this drug to some new purpose, or a greatly increased demand for the purposes for which it was formerly applied. Yet statistic data are altogether wanting to support the idea, that the consumption of Opium as a narcotic indulgence is more or likely, becoming a national vice

among any of the four Counties.
Another form of Opium evil however has been shown upon unquestionable evidence, extensively to prevail, in the large manufacturing towns of Great Britain." It is a common thing for Mothers who work in the factories, to put out their Children to nurse & it is equally common for Nurses to dose the Children with Opium to put them to sleep. It was stated by the Revd Jas Clay "that in the town of Preston alone, in 1843" upwards of fifteen hundred families were in the habit of using Godfrey's Cordial or some other equally injurious Compound.
The obvious Conclusion was, that the fatality among Children was Connected

with the use of Opium. Dr. [illegible]
therefore that in one melancholy form
at least, the true effect of Opium is to
be demonstrated. It is curious that this
should be the very form of drugging from
which the Poppy is said to have raised
its name. The diffusion of knowledge
among the mothers of the factory district,
is one of the most likely agents removing
this evil. However complicated a substance
as the powder of Opium is, yet it is known
from the list of principles which have
been found in it, used, familiar sub-
-stances, such as gum, mucilage, resin, fat, caout-
-chouc, volatile oil &c, it contains Morphia,
Narcotine, Codeine, Narceine, Thebaine, Opianine,
Meconic, pseudomorphine, peptogenin, papaverine
& Meconic acid —

Prussic a large quantity of Carb. acid, Sulph. Lime, Sulph. Potash &c. &c. Of all these, the most active is that now so universally known under the name of Morphia, of this valuable medicine, the best quality of Opium, contains as much as 10 per Cent. This Colorless, void of Smell, & nearly insoluble in water, but possesses an exceedingly bitter, unpleasant taste & strongly called by Chemists, alkaline properties. It is powerfully narcotic & poisonous, Sent. nervous irritation, stupor, pain, retention taken in a large dose imparts a remarkably itching to the skin. It is described by some as producing upon the System all the effects of the Natural Opium, this however is not generally the case. Hence it has not, I believe, been

anywhere attempted to substitute this pure [illegible] Opium in the production of pleasurable Excitement & gratification. The reason of this opinion, and the full & precise effects of the Native drug, is due to the Combined & Simultaneous action of all the numerous substances it Contains. Each of these modifies the effect which would be produced by any one of the others, and the attraction of each planet changes the Course which seem to result by any one of the others, save it the only one which revolved round the Sun. This then is from all these actions that the Peculiar pleasure of the Opium Consumer is derived, at least three of the Constituents of Opium [illegible] Morphia —

are known to be Narcotic poisons —
These are Morphia, Codeine, & Thebaine,
The Codeine, in doses of five or six grains,
produces in dogs a state of excitement
resembling intoxication. The exact action of
the other constituents upon the system is
still unknown or undecided. Indeed, it is
a remarkable fact in the history of Opium,
that as long as it has been known, & though
as it has been used, both as a medicine &
a indulgence, that we are still so unable
to say what is the true action of the drug —
& we shall save ourselves much time & useless
speculation by at once confessing our igno-
rance on this point. It is, no doubt, the
the complicated nature of the problem at the
outset the Physiological Solution is difficult

In the crude Opium, as I have before stated, there are nearly a dozen different substances mixed up in different proportions & given a name. The effects of such a mixture, we can scarcely hope, in all cases satisfactorily to explain. The proportions in which the several active ingredients are mixed up in the Opium of Commerce varies much in different samples of the drug, the country or locality, in which the plant is grown, the varieties of poppy which are cultivated, the peculiarities of the season during which the Opium is collected, the way in which it is dried & afterwards — prepared for market — all these circumstances influence the proportions of its constituents & consequently change the action of the mixed substances upon the human system. The.

Smyrna Opium is generally considered the best in the European Market; but even in this the active ingredient Morphia, varies from four to fourteen per cent. Of the ingredients of which I have often mentioned, Morphia, being the most active, is cast to most valuable by the proportion in which it exists in the samples from different districts, determines very much their relative estimation in the markets. Hence the best India Opium is inferior to the Turkish, it never yields more than four per cent of Morphia; but it is, when in fine bulk, ingredients. The Persian Opium is equally poor in Morphia. Besides the Salts Morphia, there are three other preparations of Morphia which are very extensively used; there are

the Muriate, Acetate & the pure Morphia
acid, which in proper Tray Valuable properties
& are indeed, Considered indispensable in the
arts of Medicine. Having now Considered
the Opium plant, the manner in which
Opium is obtained the Countries in which
it is grown & the uses in which it is
Employed. I will now proceed to regard
it Therapeutically. Indeed there are few
diseases with which the human family
are afflicted, to which Opium in some
form may not be applied with very
Valuable Effects; there are some known
in the Catalogue of diseases in which it
would have a pernicious Effect. Than
reference to diseases effecting the Meninges
& the Substance of the Brain & cord in these

it has been given with supposed good effects. It was at one time very extensively given in Delirium Tremens & is now by some at the present day, but is going gradually out of use since the 1st March 1865, I have seen 12 cases of Delirium Tremens, in the University Hospital & of this number were treated with Bromide of Potassium; all of them recovered, but the 2 who became with Opium, or rather Morphia by Hypodermic injection, died. This of course, does not be considered sufficient evidence of the superiority of Potassium over Opium, but the most of the eminent Physicians of Baltimore are now using Potassium to the exclusion of Opium. This it appears to from their own experience

1. In disease, as the cure of Insanity
there is no Medicine in the whole
Materia Medica which could take the
place of Opium — after some operations,
I have on more than one occasion seen
its good effects as a sedative by —
dispelling or subduing furious irritation,
when the patient would otherwise have
been compelled to suffer under pain of
a very aggravating character. I have
seen him calmly sink into a refreshing
sleep & in a few days have
improved. In Diarrhoea, Opium combined
with Sugar of Lead, has often been a speedy
cure. Hemorrhage proceeding from
the internal viscera is always alarming
& many times entirely cured by Opium

Combined with Sugar of Lead or some other astringent. Indeed as Opium is so well known to every family, it is needless for me to say further with regard to the disease, to which the Valuable Medicine is opposed; suffice it to say, that it is just to assist the Common Enemy, Death; when we cannot but see the Hand, but unmistakable approach of the Monster Death, then, by the use of Opium we can enable the Sufferer to Collect, in a very great Extent, his mental faculties, so that he may be able to dispose satisfactorily of his Earthly Effects & if such be the case after having spent a happy Eternity, to meet his friends with Jesus & then do the all things well. Care, when the functions of the vital

pleasant to the system from an other
is cause when the agonies of death are rapidly
approaching, Opium is the only certain
Drug, & may be employed in the dis—
ducing pillow. I will now give a formula
of the various preparations of Opium, & the
their relative doses, as Laudanum or —
the tincture of Opium is the most usual
of the preparations, it will be the first
which will engage our attention. Tr.
Opii is prepared according to the U. S.
Pharmacopoia by macerating two ozs &
a half of powdered Opium in two pints of
diluted alcohol. When 1 lb of Opii is to be prepared
under the value or strength of this quantity
of Opium — it is to be found in the Menstruum.
The powdered Opium, when dry, is perforate

to the gum or Crude Opium, as it is almost impossible to triturate it by hand, or mortar, this is accomplished, we may scarcely expect to have the Finest Opium, sufficient strength in preparing the Opium for use. 3ijss of Fine Opium, should be macerated with Wat. Cit. allowing it to remain for three days longer, then add the Alcohol; and after digesting for three days longer, filter through paper, it should be kept in a wide stopper bottle, as the Morphia, if refined will crystalize leaving the deposit matter at the bottom of the bottle. Sometimes a quantity of crystals in the Mist Opium are found at the bottom of our Laudanum Bottle & if by accident this should be dropped out with the Mist Opium it would be effect would be great moment

The Effect of Laudanum on the System
is entirely different it is the same as Opium
but being in Solution, is more easily absorbed
& in some Cases is preferable to Opium in Powder,
in other Cases, the Powder is preferred as the
alcohol which it contains has an irritating
effect on the Stomach, & requiring large
quantities of Laudanum, a very good
& economical way is to get out the Opium
in a sufficient quantity & saturate the
Opium in all distilled water, the same as the
original amount which was lost by evapo-
ration, add the alcohol & filter through
paper, I have made as much as a lb
in this way at one time, & found the Lau-
danum quite as good as when made
by the manufacturers the dose of Laudanum

is in boiling water for a quarter of an hour representing about one grain of Opium. Laudanum is often used directly to excite to inflammation surfaces, for which purpose it is applied internally & externally, mixed with Soap, Camphor & other substances for Liniments. This is the way in which Opium is generally used for Criminal purposes, once in most Common, & at the same time most rapid in its effect. For poisoning by Opium, Laudanum or any of the preparations from Opium, there is no certain or efficient antidote, to neutralize the poison, the important indications are to evacuate the Stomach, & to support the System while under the influence of the poison. The first indication is to be met with Emetics or the Stomach pump, but the latter

Direct, is not so reliable as emetics, as the stomach pump is likely to be filled up with substance in the stomach, which may under it usefulness. Emetics are generally considered more reliable & are also as a rule more convenient. Of the emetics, I should prefer Ipecac: Sulph Zinc, but in the absence of these I would take the next most convenient, such as Mustard in Powder, Salt emetic, Sulph Copper, Cayenne pepper or any thing which may produce this effect, followed by a draught of warm water or Chamomile tea. The Sulph Copper, I should not use unless I could not get any of the other emetics & should in this case be very careful, as it has a tendency to irritate the stomach. I should also use the.

Sulphuric with Camphor, and a corresponding result. I tried in the meantime, also the galvanic electric shocks, by throwing cold water over him, by whipping with the lash, or by smacking him on the exposed parts, at the same time keeping him in motion. As I have said in another part of my discourse, Belladonna is supposed to have some antidotal power over Opium, as it has an opposite effect on the pupils of the eye, probably this is the case, but this I believe has not been satisfactorily proven. The hypodermatic preparation, in our consideration, is superior to the Tr Opii Camph. This hypodermatic preparation is made by macerating one Opium, one pint Boiling water, filtering & preserving

I have prepared it in quantities of 10 Gals at a time, by using Laudanum instead of Pure Opium. In preparing it in this way, I first take sufficient Alcohol to dissolve the Oil of Anise & Camphor which is about a quart, I then mix the Alcohol & Water, of course taking into account the quart I has used to dissolve the Anise & Camphor, then adding the Laudanum, Benzoic Acid Camphor, Oil Anise & lastly the Honey, This preparation is so well known by most the Green Nurses of every Household, to require only a passing Notice. It contains about a grain of Opium in every half oz. This Tincture is not intended to produce the full narcotic or Soporific Effects

Opium. This preparation of Opium is used in the place of Laudanum, for instillation of the Medicine in those Cases in which a full Anodyne Effect is not required. The Just Preparation which we will Notice is the Acetated Tincture of Opium, or Vin Opii Acetata. This preparation has been introduced as a substitute for the Vinegar of Opium or Black Drop. It is made by macerating Opium in a Mixture of Vinegar and Alcohol. The only advantage that is Claimed for it over Laudanum is that it is somewhat weaker in Alcohol & that the active principles of the Opium is more fully, to some extent, by Acetic acid of the Vinegar. This preparation is said to agree with some patients who

Cannot take Laudanum conveniently.
The dose is from five to twenty drops.
Wine of Opium, Vinum Opii v. Sydenhams
Laudanum, is prepared by macerating
Opium, Cinnamon, & Canadian Snakeroot.
From its aromatic properties, from its
having less smell than Laudanum,
it is preferred to this preparation is
more acceptable to the Stomach. It is also
used in Ophthalmia. When first applied
the Eye, it is followed by a copious flow of
tears, but these effects are soon followed by
relief. The dose is about twenty drops.
Vinegar of Opium, Acetum Opii v. Pharmacop.
is made by digesting Opium, Malaga Sallow,
in dilute Acetic Acid & strain
the mixture is prepared. Dose much

though it and Laudanum may begin
to its full narcotic effects in doses of
from three to five drops. The next preparation
which will engage our attention is the
Vinous Solution of Opium which is not
officinal, but was sometime since introduced
by our Worthy Prof. A. R. Smith & is an
admirable preparation to apply in clinical
& inflammatory surgery. The next & last but
not least preparation is the valuable
alkaloid Morphia. There are two
methods of Extracting Morphia from Opium,
the Officinal process consists in macerating
Opium in water to Exhaustion, & adding
Alcohol to the infusion, precipitating
the Morphia by a Solution of Ammonia,
& purifying the precipitate by Solution

in adding Alcohol & filtering it hot through animal Charcoal. On cooling, the Alcohol deposits the Morphia in Crystals. The Object of adding Alcohol to the infusion is to hold the Colouring Matter in Solution. Thus procured, Morphia contains a proportion of Narcotina, from which it may be separated by the agency of Ether, which dissolves the Narcotina & leaves the Morphia pure. As I have before said there are other preparations of Morphia & in preparing these alkaloids it is not necessary to purify the menstrum by the addition of Ether. Morphia is indeed the main active principle of Opium, but it has been already

shown that it is not the only one, it has been shown that there are ten others besides morphia, & all of which perhaps valuable properties. Morphia may be given in all cases when the object is to procure sleep, or to relieve pain or irritation. It may be given by the mouth in doses of from one sixth to one fourth of a grain; one grain of morphia being equivalent to about six of Opium. It is now very extensively used by Hypodermic injection. I have used it in the form of solution, in proportion to from one sixth to one third of a grain, twice a day, with good effect. In a case of poisoning by morphia, the treatment is similar to that employed

in preferring by Opium, or the preparations from this drug. Have been several accidents from the administration of morphia Hypodermically, but this was the result of its having been given in too large doses, & I have frequently employed it in the University Hospital in Cases of Rheumatism & Sciatica, in the latter, the solution was injected into the cellular tissue over the region of the nerve, & I have seldom seen it to fail to be followed by good effect.

Having endeavored to give a correct testing of Opium & all its preparations, I will now leave the subject to those who are better able to handle it, than myself, who, are more competent to enter into the details, & whose duty it is, to make further

Analytical & experimental, investigations.
I only regret, that my knowledge of this important subject, is so limited, that I am unable to offer for your Consideration anything new, but things which are known to all those who have made medicine a study. And in Conclusion permit me to thank you for your kindness, since I have been among you, both in College & in the Baltimore Infirmary & also allow me to express my gratitude to you for the many truths, which from your long Experience as medical men you have so ably Considered & endeavored to impress upon our minds as medical Students. When I Cast my eyes around these time worn walls & think of the

Many bright stars which have gone forth from this institution, to adorn the medical profession, & have success as — Medical men have been equal to their expectations; who have been ornaments both to the profession & to Society, at large; & although the spirits of many of them have gone to the God" who gave them; our ears and endeared themselves to those with whom they were surrounded, & though dead, will ever remain to Memory dear; then it is, that I feel glad that I made the well known University of Maryland, My Choice, as an Institution of Learning, Trusting that the University of Maryland may ever remain as it now does,

Equal to any Medical School
in the country, and with the other
Institutions of learning, are holding out
new inducements, that she may keep
pace with them, and now by her Scientific
investigations, they are presenting
new & important truths; that the
University of Maryland, may be equal
to them in this respect. It is that she
may go on, & on, until she may have reached
the pinnacle, as a School of Medicine.
I will again thank you for your courtesy,
and wish you a successful, fair exit.

Very Respectfully
J. H. Guyton Jr.

To the Faculty
of the
University of Maryland

Inflammation.

Submitted to
the
Faculty of Physic
of the
"University of Maryland,"

by

Robert M. Lawson,
of
Maryland.

Vox et praeterea nihil.

To
Dr. Richd. Mc Sherry,
and
Dr. P. H. Butler,
the following meagre Compilation is most respectfully dedicated as a tribute of gratitude and respect, for the valuable instructions received while persuing my studies under their guidance and care.

Respectfully,
R. M. D.

Feb. 10th, 1869.

As it is customary in all schools of medicine for each candidate for graduation to produce, before closing his studies, a treatise on some subject appertaining to the Medical Science, I will essay to bring to light a something, to which you may with difficulty apply that name, and although such an attempt seems to me like setting sail upon some boundless ocean without compass or helm, I will strive to show my

parts to the best advantage, although I feel, sensibly feel, the inability to handle my subject as I would wish.

To write a Thesis, is the greatest trial to which the medical student is ever submitted — a task arduous, because totally without experience he is unable to give birth to anything original; and even should an idea apparently native chance to flow from his fuddled

brain, by the time it is sketched on paper it seems boldly and defiantly to ex=
=claim – "Stolen! Stolen!!"

But in spite of these accusations of plagia=
=rism, he must bend his brow to the task, and with a steady, undaunt=
=ed front, compile to the best of his ability his borrowed literary theme.

The subject I have chosen is one of tremen=
=dous breadth, and still offers, as it ever has done

the finest field for the labors of scientific men- Although it has been manipulated successively by the leading stars of the medical galaxy, each in his turn has arrived at a point where all is dark beyond - The great Hunter, around whom clustered such sattelites as Philip, Hastings, Henle and Carle - all bent upon its theory, have attempted it, and although they have soared untrodden

heights, and noted on paper the various results of their investigations, its Theory apparently remains untouched - and the same question arises still "What is Inflammation"?

And can it be expected that the young student with his meagre share of medical lore should afford any light on such a subject, while constell=ations of minds such as those enumerated above are continually beaming in

their full refulgence, and still are unable to send a solitary ray to cheer the dark abyss that en=
=velopes the subject of my theme?

No! for as the feeble light of the glow-worm is to the brilliancy of the meridian sun, so is our intillect com-
-pared with theirs.

But such a protracted prelundium must prove toil=
-some to those in whose hands it must soon fall, and I will, without further in=

=troduction, begin the ar=
=ticle by asking the question,
What is Inflammation?

There seems to be equally as many definitions of it as there are writers upon the subject, and this fact alone, stimulates me to invent an explication for myself — Inflammation, in its simplest sense, may be defined, an establishment set up by nature to rid the system of some foreign substance which is hurtful to it.

Whenever this foreign mat=

=ter, whatever it may be, in=
=vades the system, the blood
by its association becomes per=
verted - and not only is
the blood changed in its structure
and its healthful action interrupt=
=ed, but the vile contagion is
extended by direct contact to
the walls of the vessels through
which the now baneful fluid
flows, and these in their turn
must share the selfsame fate -

Again the regular commerce
that is kept up by the life-cur=
rent through the numberous
rivulets that irrigate every

organ and tissue of the body, is the means by which the general system is disturbed while inflammation is present in any locality.

Now, since we have defined this malady to be "a disordered condition of the blood and blood-vessels", we will essay to give the most remarkable diagnostics by which it evinces itself in the human body. But while we are doing this, we will also attempt to show that each of the principal local symptoms

may be present while the dis=
-ease of which it is a charac=
-teristic may be altogether absent,

Redness, swelling, heat, and pain — are the four great and necessary local symptoms in order to inflammation - and were this the only disorder that could give rise to them, the Diagnastician would experience but little difficulty in determin=
=ing upon a mode of treatment - but as I have already intimated, there are causes other than in=
=flammation, which may de=
=velope each —

Redness, — the first named symptom, is undoubtedly caused by the great accumulation of blood to, in, and around the affected part — every vessel in the imme- -diate locality becomes distended with blood to its utmost — after this accumulation, an exudation of the watery constituent of the fluid takes place, thus leaving the capillaries completely gorged with the red globules — this great engorgement distends the vessels until they become readily apparent to the naked eye — and 'tis thus we cause for the first great symptom, —

But this symptom can make its appearance while still there is no inflammation, though in such a case it is never permanent - such an instance is beautifully shown in the case of a lady when her whole face becomes suffused with that peculiar tint known as blushing - but this is not permanent, hence it is not inflammatory - Next in order comes Swelling - The causes of this phenomenon are several - the primary enlargement is always caused by the increased quantity of blood - afterwards, the swelling is kept up by the

effusion of serum, and by the formation of a substance known as pus. This symptom may also occur without inflammation - for instance, in all diseases of an oedematous character you will find swelling - the prolonged use of arsenical preparations will always produce it, it being from an accumulation of some serous fluid in the interstices of the tissues - Again - in hernia, or in dislocation, sudden swelling may come on, which is quite dif= =ferent from that of an inflam= =matory type, since inflammatory

swelling is always gradual in making its appearance —

Heat — The great Hunter for a long time, and so did many others, suppose the heat of inflammation to be caused simply by the great afflux of blood to the part — but Liebig, to whom the medical world will ever remain indebted, advanced a theory, which, from its plausi-bility was soon adopted by all — This was, that with the increased afflux of blood, there takes place a much more rapid oxydation of the various tissues of the

inflamed part - But with this as with the first two symptoms, the question arises - Can there not be heat without inflamma=tion? In fever we have the finest proof that there can -

Hectic is always accompan=ied with great burning of the hands and feet - Inflammi=tory heat must always be last=ing, and at the same time con=joined with the other signs -

Pain - is the last of the four cardinal local symptoms - Its causation is principally from the tremendous pressure

upon the nerves of the inflam=
=ed part, by the distention of
the arteries, which affects the
lesser nerves with which they
are supplied —

Like each of the for-
=mer symptoms, pain is not
always indicative of inflam-
=mation — for we can have it
in spasmodic affections — in
which cases it can be relieved
suddenly by pressure — but in
the inflammatory type it grad=
-ualy increases from the begin-
-ning, nor does it subside un=
=less resolution takes place,

or gangrene sets in — This last Symptom has in cer= =tain cases, a great peculiar= =ity over all the others, inas= =much as it may occur in a region distant to the seat of inflammation —

In Coxalgia — the pain is almost always at the Knee, while the true seat of inflam= =mation is at the Hip-joint — again — in some diseases of the Liver, the pain is in the region of the scapula — In Kidney affection, we have the pain along the track of

the Urethra —

At last we have succeeded in enumerating, and finding the cause or causes of the main symptoms which are necessary in order to testify to the presence of that great phenomenon — Inflammation — and besides this, we have shown that either may exist in the absence of the disorder of which it is a characteristic — That we cannot diagnose a case of inflammation from finding one of these signs present — that the symptoms must always

be found conjoined -

The causes of Inflammation are predisposing and exciting - or - in other words they are constitutional and local -

Cold, overexertion, and anything that tends to weaken the vitality of a part may be numbered among the causes -

Chemical effects of medicines, the mechanical effects of wounds,

The last mentioned may be more properly termed direct causes, while such as heat and cold may be classed as indirect -

Diathesis, temperament, age,

sex, habit, atmosphere and season, all exercise a great influence in the progress and termination of inflammation.

The indications of treatment are Preventative and Curative. In fulfilment of the first named, the exciting and predisposing causes must be removed. the inflamed part must be kept in an elevated position, and the strength must be kept up. The effects of the cause must be abviated, and one of the very best modes of counteracting the effects, particularly

in wounds, is the application of cold water, but here I expect the patient would have to be consulted, for warm applications might prove to some more grateful - then we might use steam, or some other warm relaxing appliance -

The Curative Treatment, consists in (1st) removing the causes - removing all secondary sources of irritation - which in many cases is all the treatment that is necessary. Always

look to the alimentary canal, and be careful also to have the urine passed regularly; if needed, moderate the af=flux of blood to the part, by cupping, leeching &c., or if necessary you can take blood from a large vessel - Thus you deplete from the whole system -

Such views as re-gards bloodletting will not meet the approbation of the entire Faculty, but they who differ will remem=

=ber that this is from a student, and as the Latine would say — vox, et praeterea nihil.

It may be found necessary to administer agents for the purpose of lessening the action of the heart — in such cases one of the best articles is that known as Veratrum Viride — Our distinguished Proff. of Therapeutics handles this agent with so much caution in his lecture that I must acknowledge I would prefer some milder one.

However, if it should be used,

employed, the greatest caution should be observed – You are always to commence with a small dose, moderating, or rather modifying it and the time as circumstances require.

It would not be amiss to make some mention, while on the treatment, of the mode of sustaining the patient – and this may be included in the treatment – A good, nutritious diet should always be allowed, though care should be taken that it is not over-stimulating –